Ritter

THE MANKIND QUARTERLY

Ambassador College
AUG 17 1978
LIBRARY

AN INTERNATIONAL QUARTERLY JOURNAL
dealing with Race and Inheritance in the Fields of
ETHNOLOGY ETHNO- AND HUMAN GENETICS
ETHNO-PSYCHOLOGY · RACIAL HISTORY
DEMOGRAPHY AND ANTHROPO-GEOGRAPHY

Vol. XVIII, No. 3 · January-March 1978

£1.50 · $3.00

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

IAAEE REPRINTS

FINDINGS ON RACIAL DIFFERENCES BY MODERN SCIENTISTS

These Reprints provide scholars, students and others with easy access to important articles on the race question by leading scientists, originally published in specialized professional journals. Currently available are thirteen titles. Others are in preparation. All are priced at 25 cents a copy, except Nos. 11 and 12 which are 50 cents.

1. KLINEBERG'S CHAPTER ON RACE AND PSYCHOLOGY by Henry E. Garrett.
2. ZOOLOGICAL SUBSPECIES OF MAN by E. Raymond Hall.
3. ON THE NATURE OF PREJUDICE by A. James Gregor
4. ETHNIC GROUP DIFFERENCES by Stanley D. Porteus.
5. THE CONTROL OF EVOLUTION IN MAN by C. D. Darlington.
6. THE EMERGENCE OF RACIAL GENETICS by R. Ruggles Gates.
7. THE RACIAL HISTORY OF SCANDINAVIA by Bertil J. Lundman.
8. SOME NEGLECTED ASPECTS OF THE 'MINORITIES' PROBLEM by George A. Lundberg.
9. THE S.P.S.S.I. AND RACIAL DIFFERENCES by Henry E. Garrett.
10. SOCIAL SCIENCE TESTIMONY IN THE DESEGREGATION CASES: A REPLY TO PROFESSOR KENNETH CLARK by Ernest van den Haag.
11. THE INHERITANCE OF MENTAL ABILITY by Sir Cyril Burt.
12. THE AMERICAN MELTING POT: ITS MEANING TO US by John M. Radzinski.
13. PSYCHODIAGNOSIS, PROGNOSIS, SCHOOL DESEGREGATION AND DELINQUENCY by Clairette P. Armstrong.

Order from:

THE INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF ETHNOLOGY AND EUGENICS, INC.
P.O. Box 3495, Grand Central Station
New York, N.Y. 10017

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Race and Modern Science

Edited, with an introduction, by
Robert E. Kuttner

The sixteen monographs in this four-part volume—anthropology, biology, sociology and psychology—by natural and social scientists, many of whom are internationally known and recognized as authorities in their fields, explore the differences between the races of man. These essays are especially timely as a contribution to the body of modern scientific literature in view of the fact that for a number of years there has been a sustained effort to explain away racial differences as nothing more than the color of the skin. The scientists brought together in this volume present evidence that the races of man differ not only in physical appearance but also psychologically and in various respects biologically.

484 pages $7.95

The Testing of Negro Intelligence

By Audrey M. Shuey

This new edition of Dr Shuey's important work, first published in 1958, is a thorough revision and updating of the earlier book. The work has been expanded with much new material added. In this new edition Dr Shuey summarizes 382 studies of mental tests given to Negroes and Whites in the United States during the last fifty years. Also included are results of tests of some 1600 Negroes in Ontario and the West Indian islands of Jamaica and Grand Cayman. Upon publication of the first edition Dr Corrado Gini, late president of the International Institute of Sociology, wrote: "... the volume constitutes a milestone in this area. After its publication, the burden of proof rests upon those who reject its conclusions."

578 pages $6.50

SOCIAL SCIENCE PRESS

310 Madison Avenue, New York, N.Y. 10017

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Etnologia-Antropologia Culturale

(già Rivista di Etnografia-fondata da G. TUCCI)

Pubblicata sotto gli auspici del Consiglio Nazionale delle Ricerche

Vol. I 1974

** Unica Rivista Scientifica Italiana dedicata allo studio Etnico-Antropologico di tutti i popoli.

** In volumi annui pubblica memorie originali di studiosi specialisti italiani e stranieri e saggi di nuove *ricerche*.

** Pubblica rassegne di aggiornamento su argomenti inerenti discipline affini: sociologia, psicologia, storia del folklore e delle tradizioni popolari, etnomusicologia, antropologia economica, linguistica, etnoiatria.

** E' aperta a tutte le scuole senza alcuna preclusione: libera palestra per il potenziamento degli studi Etno-Antropologici italiani nel quadro della vasta e complessa produzione internazionale, seguita da un ampio notiziario ed una vasta Rassegna Bibliografici.

Direttore Responsabile: Prof. Cav. VITTORIO AMEDEO CARAVAGLIOS.

Direzione-Redazione: Prof. PIERO BATTISTA-Dott. GIANFRANCA RANISIO.

L'abbonamento alla Rivista è di £5.50 per l'Italia e £6.50 per l'estero.

Per le rimesse della quota di abbonamento è preferibile servirsi del c/c postale no 6/13000 intestato: Etnologia-Antropologia Culturale: Corso Vittorio Emanuele, 110 (80121 Napoli).

Non si spediscono numeri di saggio

80121 NAPOLI, CORSO VITT. EMANUELE, 110.

Tel. 681629.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

VOL. XVIII, No. 3 THE JANUARY-MARCH 1978

MANKIND QUARTERLY

EDITOR
R. GAYRE OF GAYRE, M.A., D.Phil., Pol.D.Sc., D.Sc.

HONORARY ASSOCIATE EDITORS
Professor MARIO CAPPIERI
Professor FRANK C. J. MCGURK
Professor RICHARD LYNN, M.A., Ph.D.(Cantab.)

FORMER HONORARY ASSOCIATE EDITORS
† Professor R. RUGGLES GATES, M.A., Ph.D., D.Sc., LL.D., F.R.S.
† Professor CORRADO GINI, LL.D., D.Soc., D.Sc., D.Econ., D.Soc.Sc.
† Professor HENRY E. GARRETT, Ph.D., D.Sc.

ASSISTANT EDITORS
ROBERT KUTTNER, B.S., Ph.D.
ROBERT H. S. ROBERTSON, M.A., F.R.S.(Edin.), F.G.S.

HONORARY ADVISORY BOARD
Professor Santiago Alcobé, Barcelona, Spain; Professor P. C. Biswas, Delhi, India; Professor Felix v. Bormann, Bad Nauheim, West Germany; Dr J. C. Carothers, Bedhampton, England; Sir Raphael Cilento, Brisbane, Australia; Professor Alberto Xavier da Cunha, Coimbra, Portugal; Professor Gerrit Daams, Kent, Ohio, U.S.A.; Professor H. J. Eysenck, London; Professor A. P. Elkin, Sydney, Australia; Professor Luigi Gedda, Rome, Italy; Professor Giuseppe Genna, Rome, Italy; Professor Dr E. Hanhart, Zurich, Switzerland; Professor J. D. J. Hofmeyr, Pretoria, South Africa; Professor John L. Horn, Denver, Colorado, U.S.A.; Professor Charles C. Josey, Indianapolis, U.S.A.; Dr Watson Kirkconnell, Wolfville, Canada; Dr Taku Komai, Kyoto, Japan; Professor Bertil Lundman, Uppsala, Sweden; †Professor Branimiro Males, Tucumán, Argentina; Dr Clarence P. Oliver, Austin, Texas, U.S.A.; Professor S. D. Porteus, Honolulu, Hawaii, U.S.A.; Professor Stefan T. Possony, Stanford, California, U.S.A.; Dr David C. Rife, Clewiston, Florida, U.S.A.; Professor Alfredo Sacchetti, Tucumán, Argentina; Professor M. R. Sahni, Punjab, India; Professor Herbert Sanborn, Tenessee, U.S.A.; Professor Henreich Schade, Düsseldorf, West Germany; †Professor Walter Scheidt, Hamburg, West Germany; Dr John Scudder, New York, U.S.A.; †Professor Sergio Sergi, Rome, Italy; Dr Audrey M. Shuey, Lynchburg, Virginia, U.S.A.; Professor M. J. Sirks, Groningen, Netherlands; Professor Torsten Sjögren, Stockholm, Sweden; †Professor Giovanni Tucci, Naples, Italy; Professor Harry Turney-High, Columbia, South Carolina, U.S.A.; Professor O. v. Verschuer, Münster, Westphalia, West Germany; Professor H. V. Vallois, Paris, France; Professor E. Peter Volpe, New Orleans, U.S.A.; Dr R. J. Walsh, Sydney, Australia; Professor K. Robert V. Wikman, Abo, Finland.

Published by
THE MANKIND QUARTERLY
1 Darnaway Street, Edinburgh, EH3 6DW, Scotland

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

VOL. XVIII, No. 3 JANUARY-MARCH 1978

CONTENTS

THE DERMATOGLYPHICS OF SOUTH MISSISSIPPI ANGLO-SAXON SCHOOL CHILDREN: PART I
by Donald A. Swan 163

A DERMATOGLYPHIC APPROACH TO THE PROBLEM OF RAJPUT ORIGIN: PART I
by Prasanta Kumar Chattopadhyay and Krit Pal singh Kushwaha 186

LINGUA ADAMICA
by Marge E. Landsberg 202

THE LINGUISTIC AFFINITIES OF THE SCYTHS
by Robert E. Kuttner 222

JOURNALS RECEIVED 227

BOOK REVIEWS 228

Articles appearing in this Journal are abstracted and indexed in *Historical Abstracts* and *America: History and Life*

© 1978 THE MANKIND QUARTERLY

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Dermatoglyphics of South Mississippi Anglo-Saxon School Children*

By DONALD A. SWAN and GARNETT HAWKINS

PART I

1. INTRODUCTION

Fingerprints have been used as a means of personal identification in Europe and America since the beginning of the twentieth century—and in East Asia possibly many centuries earlier. Fingerprints, as well as palmprints and footprints, are established early in fetal development and thereafter do not change with age. They are also highly heritable and are not affected by environmental factors such as nutrition and climate. In addition, the patterns on the fingers and palms are unique to each individual and vary among the races and peoples of the world.[1]

These properties have made dermatoglyphics—the science of finger-, palm-, and footprints—an excellent research tool in the fields of physical anthropology, human biology, and medical genetics. Physical anthropologists employ dermatoglyphic data in comparative anthropological studies and to determine the affinities between populations. Human biologists employ dermatoglyphic data as criteria in the diagnosis of the zygosity of twins and in the study of the intensity of natural selection on population characteristics. Medical geneticists employ dermatoglyphic

* The present study constitutes partial fulfillment of the thesis requirements for the degree of master of science in anthropology at the University of Southern Mississippi by Mr Garnett Hawkins. Mr Hawkins classified and scored the fingerprints and palmprints of the school children. The dermatoglyphic research is one part of an anthropological and psychological study of American school children of Anglo-Saxon origin. This study has been organized and directed by Mr Donald A. Swan, Assistant Professor of Anthropology at the University of Southern Mississippi. The authors wish to express their thanks to Mr David Townsend, the headmaster of Sandford Academy, and to Mr Jerry Sims, the headmaster of Columbia Academy, for their co-operation and assistance in the research project. Dr David C. Rife, former secretary of the American Society of Human Genetics, and Dr Karen Yarborough, Director of the Institute of Genetics at the University of Southern Mississippi, were of great assistance in organizing the dermatoglyphic research. The research was supported by grants from the Pioneer Fund, the Institute for the Study of Man, and the Foundation for Human Understanding.

[1] David C. Rife, "Dermatoglyphics as Ethnic Criteria," *The American Journal of Human Genetics*, Vol. 6, No. 3, 1954, p. 319.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

data in the diagnosis and analysis of chromosomal abnormalities, as well as certain forms of mental retardation and mental illness.[2]

It is the purpose of this paper to report on a study of the dermatoglyphics of school children at two academies in the South Mississippi area. Six dermatoglyphic measures from three different dermatoglyphic trait systems were obtained from a sample of school children in all 13 grades of the two academies. These data were first tabulated and analyzed with respect to variations by grade, sex, hand, and academy. Then, data for the three dermatoglyphic trait systems from this population were compared to published data from other populations throughout the world. Finally, the correlations between the various dermatoglyphic measures and four measures of mental ability were calculated and statistically analyzed.

2. HISTORICAL BACKGROUND

The modern science of dermatoglyphics, with applications in criminal identification and physical anthropology, developed from the work of four Englishmen in the late nineteenth century —Henry Faulds, William Herschel, Francis Galton, and E. R. Henry.[3] Dr Faulds was a medical missionary in Japan and the first person to draw general scientific attention to fingerprints. In a letter to *Nature*, published in 1880, Faulds described finding fingerprint impressions on ancient Japanese pottery which were probably intended to identify the maker. He had taken inked impressions from Japanese and Europeans and concluded that there were racial differences in pattern frequencis.[4]

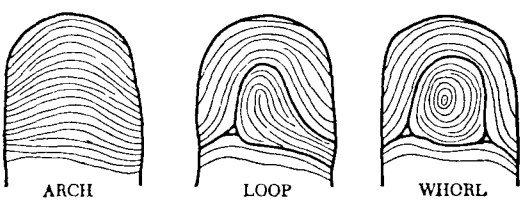

FIGURE 1

Three basic types of fingerprints — Arch, Loop and Whorl (Coon, 1965).

Dr Faulds also described the three basic types of fingerprint patterns—arches, loops, and whorls—which are to this day still

[2] David C. Rife, *op. cit.*, pp. 319-327.

[3] D. W. Forrest, *Francis Galton: The Life and Work of a Victorian Genius*, Taplinger, New York, 1974, pp. 207-223.

[4] Henry Faulds, " On the Skin Furrows of the Hand," *Nature*, Vol. 22, 1880, p. 605.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

employed in dermatoglyphic studies. Arches are the simplest pattern—consisting of upward cresting wavy lines and lacking a triradius. Loops are oblique, U-shaped configurations, with the ridges flowing out to the border of the digit. On one side of the finger the loop remains open, while on the other side it joins its base line by a triangular junction known as a triradius. Whorls are enclosed circular patterns joined to the base line by two or more triradii. The three basic types of fingerprint patterns are illustrated in Figue 1.[5]

Sir William Herschel was at that time chief administrator of a district in Bengal, India, For more than 20 years he had used fingerprints for identification of prisoners in jails and to prevent fraud and impersonation in court proceedings. Herschel collected several thousand prints during this time. By comparing prints taken at different times, Herschel was the first to demonstrate their unchanging characteristics over time.[6]

Sir Francis Galton, who was one of the greatest geniuses of the nineteenth century, made important contributions to the development of the sciences of human heredity, statistics, and psychological testing, as well as dermatoglyphics. Galton established an anthropometric laboratory in South Kensington, England, in 1884. He took measurements from thousands of subjects of weight, sitting and standing height, arm span, breathing capacity, strength of pull, force of blow, reaction time, keenness of sight and hearing, color discrimination, and judgments of length. In 1888 Galton began systematically to collect fingerprints from subjects at the Anthropometric Laboratory. At first he restricted himself to thumbprints, before realizing that the patterns generally differed from finger to finger. From 1890 onward Galton began to take prints from all ten fingers.[7]

By 1892 Galton had collected enough fingerprint data to produce the first book on the subject. This was a 200-page volume entitled *Finger Prints.* In this work " Galton established the importance of fingerprints in biological and criminological investigation."[8] A subsequent volume on the classification and indexing of fingerprints was published in 1895 under the title of *Finger Print Directories.*

In his first book on the subject, Galton discussed the various methods of obtaining fingerprints, the physiological functions of the ridges, and the details of the patterns provided by the

[5] Carleton S. Coon, *The Living Races of Man,* Knopf, New York, 1965, p. 259.
[6] D. W. Forrest, *op. cit.*, pp. 210-212.
[7] D. W. Forrest, *op. cit.*, pp. 207-223.
[8] D. W. Forrest, *op. cit.*, p. 213.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ridges on the digits. He adopted Fauld's system of three basic categories of fingerprint types—whorls, loops, and arches. However, Galton also noted compound patterns and various transitional forms that could provide problems in classification.[9]

The variety of forms of the cores found at the center of the whorls and loops and the different courses of each ridge constitute the minutiae of fingerprints. Galton analyzed the minutiae of the fingerprints in Sir William Herschel's collection. The collection consisted of "successive prints taken from fifteen persons at various stages in their life span." Galton marked 700 minutiae in these prints and found only one change over time. On the basis of this evidence he conclusively demonstrated the permanence of fingerprints.[10]

Galton also demonstrated the individual uniqueness of fingerprints. The complex of minute ridge details on one finger was shown not to be duplicated on any other finger of that subject or other subjects. He further established a method of indexing so that fingerprints could be used for personal identification. Galton's system entailed classifying each finger into the whorl, loop, or arch (w, l, or a) category, with loops on the fore-fingers subdivided into inner or outer. An individual's formula was then written by a sequence of ten letters. Nine per cent of Galton's initial sample of 100 who were indexed by this method had loops on all ten fingers. Galton, therefore, suggested "the classification of loop cores, or a count of the ridges between core and upper limit of the loop as further aids in distinguishing individuals within this common group."[11]

Finally, Galton investigated the hereditary basis of fingerprint patterns and provided the first evidence of racial differences in the frequency of fingerprint patterns. The former was investigated by statistical analysis of family similarities in combinations of fingerprint patterns. Racial differences were demonstrated by comparing the distribution of the three basic fingerprint types among English and Jews in Galton's collection. A higher frequency of whorls and lower frequency of loops was found among the Jewish sample as compared to the English sample.[12]

In late 1893 a committee from the British government visited Galton's anthropometric laboratory and investigated the possible adoption by the British prison system of Galton's fingerprint index system for personal identification. The Asquith Committee, as it was later termed, recommended the combined

[9] D. W. Forrest, *op. cit.*, p. 215.
[10] D. W. Forrest, *op. cit.*, p. 216.
[11] D. W. Forrest, *op. cit.*, pp. 217-218.
[12] D. W. Forrest, *op. cit.*, pp. 216-217.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

use of Bertillon's system of anthropometric measurements and Galton's system of fingerprint categories. This system was first adopted in Bengal, India, by the then Chief of Police, E. R. Henry. Henry visited Galton's laboratory in England and corresponded extensively with him. In 1900 Henry introduced the system into England, and the next year was appointed Chief Commissioner of the Metropolitan Police. There Henry conducted an efficient fingerprint bureau " which served as a model for the police forces of other countries."[13]

According to Forrest (1974), the contributions of all four individuals were essential to the development of the fingerprint system as a means of personal identification. Faulds was the first to publish on the subject. Herschel was the first to establish a fingerprint system and to provide evidence for the persistence of fingerprints over time. Henry improved the method of classification which resulted in its adoption by Scotland Yard. Galton's contribution was " to bring together and strengthen the evidence that fingerprints could provide an ideal technique for personal identification."[14]

3. THE TOPOGRAPHY OF THE HAND

Since the early pioneering studies of fingerprints by Sir Francis Galton in the 1890s, dermatoglyphics has developed into an established science with standardized methods and techniques of obtaining and classifying data. In addition to tabulation of the frequency of the basic fingerprint types, many other dermatoglyphic features of the fingers and palms are described and analyzed by workers in the field. Much of the methodology employed by contemporary dermatoglyphic researchers was developed a number of years ago by the American scientist—Dr Harold Cummins. His book *Finger Prints, Palms and Soles: An Introduction to Dermatoglyphics* (1943) has become the standard reference for workers in the field.[15] The basic topographic features of the fingers and palms and the various measures and indices based upon them are described below.

A. THE FINGERS

Galton's original classification of the ridge pattern on the fingertips into three categories—whorls, loops, and arches—is still recognized and widely used today by workers in the field of dermatoglyphics. This is especially so in the area of physical anthropology where tabulations of the percentage distribution

[13] D. W. Forrest, *op. cit.*, pp. 219-222.
[14] D. W. Forrest, *op. cit.*, p. 223.
[15] Harold Cummins and Charles Midlo, *Finger Prints, Palms and Soles: An Introduction to Dermatoglyphics*, Blakiston, Philadelphia, 1943.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of basic fingerprint types in different races and peoples are employed to estimate population affinities.[16] To facilitate such population comparisons a variety of indices based upon the frequency of the three basic fingerprint types have been proposed. The most commonly used are the fingerprint index (F.P.I.) and the pattern intensity index (P.I.I.).

The fingerprint index is calculated by assigning a value to each of the ten digits of a subject according to the type of pattern. Thus, arches are counted as zero, loops as one, and whorls as two. The values for the ten fingers are then added together to arrive at the fingerprint index. The range of values for the F.P.I. extends from zero for a subject with arches on all ten fingers to 20 for a subject with whorls on all ten fingers.[17]

The pattern intensity index is calculated for a percentage distribution of fingerprint types by adding the frequency of loops to twice the frequency of whorls and dividing this total by ten. This index can be calculated from mean population frequencies and is more useful in comparative population studies employing data where the complete frequency distributions are unavailable.[18]

Investigators subsequent to Galton also studied the distribution of the three basic fingerprint types on the different digits and the pattern differences between the left and right hands (bimanual symmetry). According to Cummins and Midlo (1943), "whorls and radial loops are more frequent in right hands, while ulnar loops and arches are more common in left hands." With regard to the digital distribution, investigators have found that digit I (the thumb) presents the highest incidence of whorls and digit V (the pinky) the highest frequency of ulnar loops.[19]

Modifications and elaborations of Galton's initial three basic types of fingerprints have also been proposed by later investigators. Whorls and loops may be further classified on the basis of size, core construction, and form of the pattern area. By including various transitional patterns, Cummins and Midlo (1943) presented a "fingerprint family tree" of 39 different types.[20]

In his pioneering work on *Finger Prints* (1892), Galton noted the inadequacy of relying upon the distribution of the three basic types of fingerprint patterns as a means of personal identification. This was due to the presence of one basic pattern

[16] Ilse Schwidetzky (editor), *Die neue Rassenkunde*, G. Fischer Verlag, Stuttgart, Germany, 1962, pp. 35-58.
[17] Harold Cummins and Charles Midlo, *op. cit.*, pp. 70-71.
[18] Ilse Schwidetzky, *op. cit.*, p. 37.
[19] Harold Cummins and Charles Midlo, *op. cit.*, pp. 69-70.
[20] Harold Cummins and Charles Midlo, *op. cit.*, p. 62.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

—especially the loop pattern—on all ten fingers of some subjects. Galton, therefore, proposed a count of the ridges between the core and the upper limit of the loop as a further aid in distinguishing individuals.

Cummins and Midlo (1943) outline three methods for recording the ridge counts on the fingers of subjects. The first method comprises a count of the ridges from the triradial point to the point of the core. The second counts the ridges from a traced radiant to a triradial point. The third method counts the ridges along a one-centimeter line placed at right angles to ridges. The ridge counts are then recorded separately for each finger, summed by hand, or totalled for both hands.[21]

B. THE PALMS

In the later development of the science of dermatoglyphics, much attention has been paid to the patterns on the palm of the hand, in addition to the fingerprint patterns. Cummins and Midlo (1943) also developed systematic methods for describing the dermatoglyphic characteristics of the palms. The major topographical features of the palms and the numbering of the interdigital intervals are presented in Figure 2.[22]

The interdigital intervals are the clefts between the fingers. They are numbered in sequence beginning with the interval between the thumb and index finger. The four interdigital pads are located around the central hollow of the palm. Each pad is given the number of the adjacent interdigital interval. In addition, the thenar eminence is the region of the palm below the thumb, where the muscles controlling the thumb are located. The hypothenar eminence is a more elongated portion of the palm directly below the little finger.[23]

The major flexion creases found on most hands are also illustrated in Figure 2. The radial longitudinal crease curves around the thenar eminence and the first interdigital pad. The distal transverse crease and the proximal transverse crease "form an incomplete proximal boundary of the region occupied by interdigital pads II, III, and IV." The levels of termination of the latter two creases at the ulnar border of the palm "aid in defining zones for formulating palmar main lines."[24]

The palmar surface is divisible into six anatomically defined dermatoglyphic areas. These comprise the hypothenar area, the thenar area, and the four interdigital areas. The six areas are illustrated in Figure 3. Each of the six areas is a topographic

[21] Harold Cummins and Charles Midlo, *op. cit.*, pp. 74-75.
[22] Harold Cummins and Charles Midlo, *op. cit.*, pp.84-119.
[23] Harold Cummins and Charles Midlo, *op. cit.*, pp. 84-85.
[24] Harold Cummins and Charles Midlo, *op. cit.*, p. 85.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

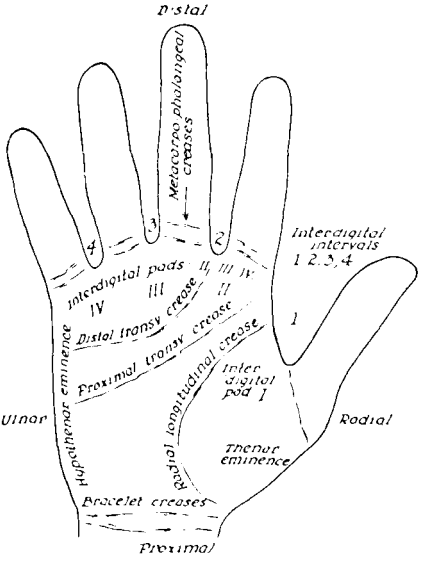

FIGURE 2

Dermatoglyphic topography of the palm — interdigital areas, thenar and hypothenar areas, and the major flexion creases (Cummins and Midlo, 1943).

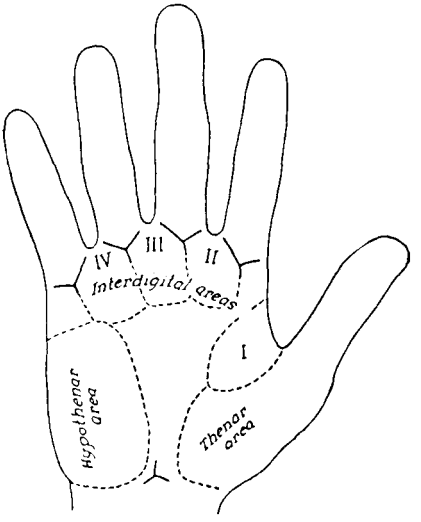

FIGURE 3

Dermatoglyphic topography of the palm — the six primary dermatoglyphic areas (Cummins and Midlo, 1943).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

unit, with partial boundaries formed by triradii and their radiants.[25] Patterns, which are essentially of the same type encountered on the fingertips, are found to varying degrees in the dermatoglyphic areas of the palms. Where the flow of the palmar ridges forms a loop or a whorl, this is considered to be a "true pattern." In comparative studies, the percentage of subjects with patterns present in one or more of the six areas may be tabulated.[26]

A basic dermatoglyphic landmark found in both fingertips and palmar patterns is the triradius. A triradius is a Y-shaped configuration "formed by the confluence of three ridge systems." The geometric center of the triradius is termed a triradial point. The triradial point is the conjunction of three ridges that form angles of approximately 120° with one another.[27] Typically, there are four digital triradii located on the palms immediately below the bases of digits II, III, IV and V. The triradii are designated a, b, c, and d, proceeding from the index finger to the little finger. These digital triradii are illustrated in Figure 5.[28]

The four digital triradii constitute anatomical landmarks from which the palmar lines are derived. For this purpose the periphery of the palm is numbered in a standardized sequence from one to 13, beginning with the base of the palm below the thenar eminence and terminating with the area between the index finger and the thumb. This numbering system is illustrated in Figure 4a.[29]

The proximal radiants of the four digital triradii are directed toward the interior of the palm. When fully traced along their entire course within the palm, these lines are termed the palmar main lines. The four palmar main lines originate from the respective digital triradii as their proximal radiants and are designated in sequence A, B, C, and D. The palmar main lines are classified by the number of the area of the palm in which the line terminates. The palmar main line formula is given by recording these numbers in the order D, C, B, A, with periods separating the symbols.[30]

The main line formula describes the general direction of the flow of the palmar ridges. However, Cummins and Midlo (1943) note that the terminations of two of the main lines, A and D, "are adequate to depict the general ridge direction in all

[25] Harold Cummins and Charles Midlo, *op. cit.*, p. 85.
[26] Blanka Schaumann and Milton Alter, *Dermatoglyphics in Medical Disorders*, Springer Verlag, New York, 1976, pp. 38-44.
[27] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 34-37.
[28] Harold Cummins and Charles Midlo, *op. cit.*, pp. 85-86.
[29] Harold Cummins and Charles Midlo, *op. cit.*, pp.86-89.
[30] *Ibid.*, pp. 86-89.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

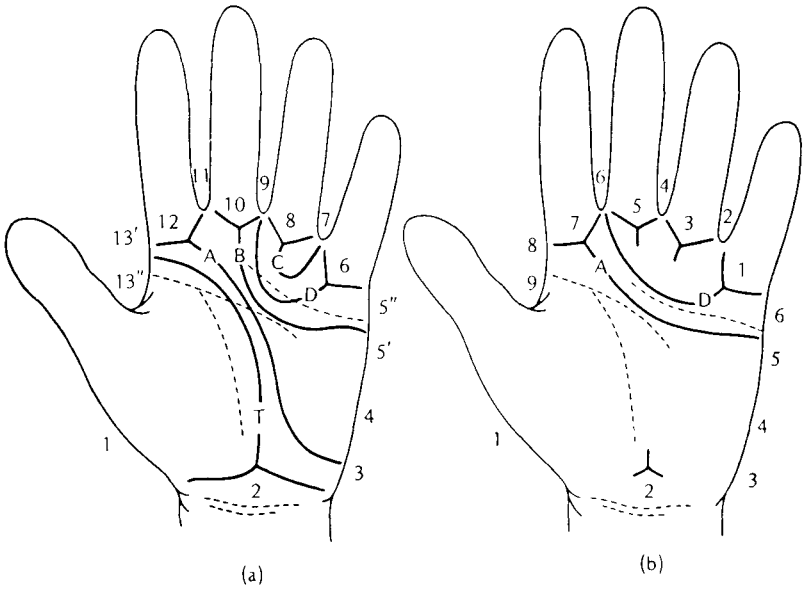

FIGURE 4

Dermatoglyphic topography of the palm — numerical system for formulating palmar main lines in the main-line formula (a) and in deriving the main-line index (b) (Schaumann and Alter, 1976).

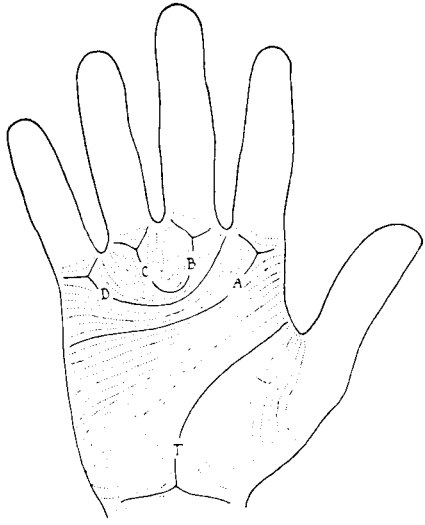

FIGURE 5

Dermatoglyphic topography of the palm — identification of the main lines (A, B, C, D, T) in a palm having the formula: 11.10.8.5'. (Cummins and Midlo, 1943).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

palms." Hence, the most significant features of the total main-line formula can be recorded by combining the values of the terminations of the A and D lines into a single index—the *main-line index* (M.L.I.).[31]

For the purpose of calculating the index, the peripheral or exit areas of the palm are renumbered, so that the numbers 1-8 substitute for main-line formula numbers 6-13. This renumbered system of palmar lines is illustrated in Figure 4b. The main line index is the sum of the renumbered values of lines A and D. The index is recorded for each palm separately.

The value of the main-line index gives an estimate of palmar ridge transverseness, A low index value indicates vertical alignment of the palmar ridges. A high index value indicates horizontal alignment of the palmar ridges.[32]

In addition to the digital triradii, another dermatoglyphic landmark is the axial triradius. The axial triradius is generally

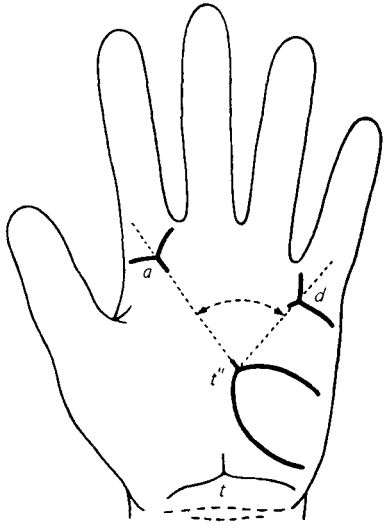

FIGURE 6

Dermatoglyphic topography of the palm — measurement of the maximal ATD-angle (Schaumann and Alter, 1976).

located near the base of the palm. It is designated by the letter t, as shown in Figure 5. Frequently, two or three axial triradii are

[31] Harold Cummins and Charles Midlo, *op. cit.*, pp. 114-115.
[32] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 69-70.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

found on the palm of an individual. A triradius located near the center of the palm is designated by the letter t''. These two triradii are illustrated in Figure 6. An intermediate triradius, located between t and t'', is denoted by the symbol t'.[33]

In some individuals the number of triradii on the distal palm may be greater than or less than four. This may be due to a missing triradius, a fusion of two triradii into a single triradius, or the presence of additional (accessory) triradii in some of the interdigital areas. In comparative dermatoglyphic studies, the percentage of subjects with accessory triradii in the various interdigital areas and with accessory axial triradii may be tabulated.[34]

Many dermatoglyphic features can be described in quantitative terms. These consist of counts of the number of triradii or ridges within a pattern and the measure of distances and angles between specified points. One widely used measure is the ATD-angle. The ATD-angle is the angle formed by lines drawn from the digital triradius a and the digital triradius d, which intersect at the axial triradius t. The location of the dermatoglyphic reference points for the determination of the ATD-angle is illustrated in Figure 6.[35]

The more distal or forward in the palm is the position of the axial triradius t, the larger will be the ATD-angle. However, the ATD-angle is one of the few dermatoglyphic features that change with age. In the course of growth, the palm grows more in length than breadth—i.e., becomes more elongated. Hence, the ATD-angle tends to decrease with age.[36]

Ridge counts are often made of the digital areas of the palms. Three such measures between two different digital triradii are employed in dermatoglyphic studies. These are the a-b, b-c and c-d ridge counts. The a-b ridge count is obtained by drawing a straight line connecting the triradial points a and b. The number of ridges intersecting this line, excluding the ridges forming the triradii, constitutes the a-b ridge count. This procedure is illustrated in Figure 7.[37] Similar counts can be made of the ridges between the triradial points b and c and c and d to yield the b-c and c-d ridge counts.

Human palms are also covered by creases of varying length, depth, and direction. The three major palmar flexion creases—the radial longitudinal crease, the proximal transverse crease, and the distal transverse crease—have already been described.

[33] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 52-53.
[34] Blanka Schaumann and Milton Alter, *op. cit.*, p. 46.
[35] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 65-67.
[36] Blanka Schaumann and Milton Alter, *op. cit.*, p. 66.
[37] Blanka Schaumann and Milton Alter, *op. cit.*, p. 63.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Palmar flexion creases of the type illustrated in Figure 2 are sometimes termed the three-finger crease or line.

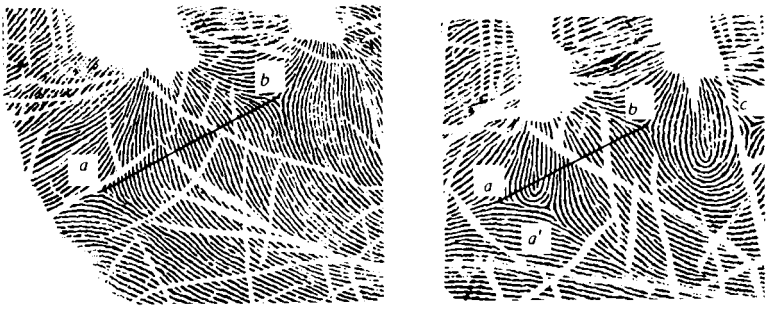

FIGURE 7

Dermatoglyphic topography of the palm — calculation of the a-b ridge count (a) with a single triradius a; and (b) with an accessory triradius a' in addition to triradius a (Schaumann and Alter, 1976).

Variations in the course and appearance of these palmar flexion creases have also been noted. Sometimes the proximal and distal transverse creases are joined into one single crease that traverses the whole palm. This single transverse flexion is termed the simian crease or line. The two types of flexion

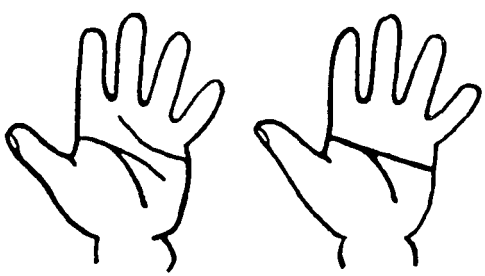

FIGURE 8

Dermatoglyphic topography of the palm — three-finger and four-finger creases (Schwidetzky, 1962).

creases are illustrated in Figure 8. In comparative dermatoglyphic studies, the percentage of subjects with simian or four-finger creases may be tabulated.[38]

[38] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 105-113.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

4. THE GENETICS OF DERMATOGLYPHIC PATTERNS

Sir Francis Galton (1892) also conducted the first scientific studies of the influence of heredity on fingerprint patterns. In one early experiment Galton examined the right index finger of 105 paired siblings noting the incidence of occurrence of the nine possible pattern combinations—i.e., loop-loop, loop-whorl, whorl-arch. . . . These results were then compared with the pattern-combinations of the index fingers of unrelated persons paired at random. For this control series the frequency of the nine combinations was almost identical to chance expectation. For the sibling series the concordance of patterns was far greater than chance. Hence, Galton concluded that the type of pattern found on the fingers was primarily determined by heredity.[39]

Galton also investigated parent-child resemblances in fingerprint patterns, as well as those of twins. He found a strong tendency toward resemblance in the ridge patterns of identical twins, although differences were observeable in the pattern minutiae. In any event, these studies further pointed to "hereditary determination of pattern type."[40]

The American pioneer student of dermatoglyphics, H. H. Wilder, investigated the inheritance of palmar patterns by means of twin and family studies. Wilder's data demonstrated the familiar transmission of patterns, as opposed to patternless configurations, in the various palmar areas. In the view of Cummins and Midlo (1943), the family pedigrees collected by Wilder provide "an illustration of the fact of inheritance, and one which suggests a dominance of patterns over patternless configurations" in the thenar/first interdigital area.[41]

Weinand (1937) employed family pedigree data to study the inheritance of palmar patterns and palmar main lines. He noted that for the hypothenar area, and for interdigital areas II, III, and IV, the presence of a pattern appeared to be "dominant over open field."[42] Furthermore, according to Cummins and Midlo (1943), Weinand's data on 52 families with 230 children provide evidence that "the directions of line D and the associated line C are heritable."[43]

More accurate estimates of the inheritance of dermal ridge patterns have been obtained from studies of quantitative dermatoglyphic measures, such as the ridge counts on the fingers.

[39] D. W. Forrest, *op. cit.*, pp. 216-217.
[40] Harold Cummins and Charles Midlo, *op. cit.*, p. 216.
[41] *Ibid.*, pp. 216-217.
[42] H. Weinand, "Familienuntersuchungen über den Hautleistenverlauf der Handfläche," *Zeitschrift für Morphologie und Anthropologie,* Vol. 36, 1937, pp. 418-442.
[43] Harold Cummins and Charles Midlo, *op. cit.*, pp. 232-233.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The ridge count "gives an estimate of pattern-size," which "is an objective feature of patterns and obviates the need for making subjective decisions concerning pattern-type." The ridge counts on each of the ten fingers of an individual can also be summed to provide the *total ridge count.*[44]

Dr Sarah B. Holt (1961) investigated the inheritance of the total ridge count by means of sib-pair correlations, parent-child correlations, and twin-twin correlations. For two combined samples consisting of 642 pairs of siblings, Dr Holt obtained an intraclass correlation coefficient of: $r = +0.50$. The correlation between parents and children "has also been found to be near a half." Data from 149 families with 301 children, 156 sons and 145 daughters, were employed in this study. The correlation between the mothers and the children was: $r = +0.49$, while the correlation between the fathers and the children was: $r = +0.50$. (However, the correlation between the two parents was low and not statistically significant: $r = +0.05$.)[45]

Identical twins are very similar in ridge count, although they "may differ considerably in details." Twin studies by Dr Holt and other investigators have found that "the correlation for total ridge-count between monozygotic twins is very high, while that between dizygotic twins, like that between sibs, is not significantly different from 0.5." For 80 pairs of monozygotic twins, Dr Holt found the correlation coefficient for total ridge count to be: $r = +0.95$. For 92 pairs of dizygotic twins, the corresponding measure was: $r = +0.49$. Similar results were obtained from a larger series of French twins.[46]

On the basis of these investigations, Dr Holt concluded that there is no doubt that "finger-pattern size, as measured by total ridge-count, is strongly determined by heredity." The highly significant parent-child and paired-sibling correlations, the far higher correlations for monozygotic than for dizygotic twins, and the similarity of dizygotic twin and sibling correlations "all combine in showing that total ridge-count is an inherited metrical character."[47]

Since the mother-child and father-child correlations for total ridge count are essentially the same, Dr Holt concludes that "there is no evidence here of a maternal (environmental) effect." The small environmental effect on total ridge count "must of necessity be maternal, for only conditions *in utero* can effect

[44] Sarah B. Holt, "Inheritance of Dermal Ridge Patterns," in L. S. Penrose (editor), *Recent Advances in Human Genetics,* Little, Brown and Company, Boston, 1961, pp. 102-104.
[45] Sarah B. Holt, *op. cit.*, pp. 108-110.
[46] Sarah B. Holt, *op. cit.*, pp. 110-111.
[47] Sarah B. Holt, *op. cit.*, pp. 111-112.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the formation and alignment of dermal ridges." This environmental effect can operate only over a short period, since "the ridges are completely formed by the end of the fourth foetal month."[48]

Statistical analysis of the distributions of the total ridge count data lead Dr Holt to conclude that total ridge count is a discontinuous trait, with dominance almost absent. The non-normality of the frequency distributions suggests that "a comparatively small number of genes is involved." Dr Holt believes that "at least 3 allelles, at either one locus or more than one, are involved, and probably more."[49]

The inheritance of quantitative dermatoglyphic features of the palms has also been investigated by a number of researchers. Pons (1954) employed the Cummins's main line index as a measure of transverseness in a genetical study of palmar main lines.[50] He obtained "parent-child, sib-sib, and monozygotic twin correlations similar to those found for total finger ridge-count."[51] Penrose (1954) investigated the inheritance of the ATD-angle,[52] while Fang (1950) analyzed the inheritance of the a-b ridge count.[53] According to Dr Holt, "In both cases a genetical factor was shown to be present, though the ATD-angle is apparently strongly influenced by environment during early prenatal development."[54]

Physical anthropologists such as Ilse Schwidetzky (1962) regard dermatoglyphic traits as "highly heritable, Mendelian but non-analyzable traits."[55] Some students of dermatoglyphics have attempted to determine the mode of inheritance of various dermatoglyphic traits by analysis of family data. However, "in each case the results have been inconclusive and the genetic process involved has not been elucidated."[56] Thus, the geneticist Curt Stern (1960) concludes that clear evidence of hereditary influence on ridge patterns is shown by family data, although

[48] Sarah B. Holt, *op. cit.*, p. 112.
[49] Sarah B. Holt, *op. cit.*, pp. 112-113.
[50] J. Pons, "Herencia de las lineas principales de la palma: Contribución a la Genética de los caracteres dermopapilares," *Trabajos del Instituto Bernardino de Sahgún de Antropología y Etnología del C.S.I.C.*, Barcelona, Vol. 14, 1954.
[51] Sarah B. Holt, *op. cit.*, p. 118.
[52] L. S. Penrose, "The Distal Triradius t on the Hands of Parents and Sibs of Mongol Imbeciles," *Annals of Human Genetics*, Vol. 19, 1954.
[53] T. C. Fang, "The Inheritance of the a-b Ridge-Count on the Human Palm, with a Note on its Relation to Mongolism," *University of London: Ph.D. Thesis*, 1950.
[54] Sarah B. Holt, *op. cit.*, pp. 117-118.
[55] Ilse Schwidetzky, *op. cit.*, p. 36.
[56] Sarah B. Holt, *op. cit.*, p. 101.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

" neither the type of gene nor the number of loci involved has been determined."[57]

5. DERMATOGLYPHICS IN MEDICAL DISORDERS

In his early pioneering work on *Finger Prints* (1892), Galton investigated the possible relation between mental and behavioral traits and fingerprint patterns. At that time, he found no relation and wrote: " I have prints of eminent thinkers and of eminent statesmen that can be matched by those of congenital idiots. No indications of temperament, character, or ability are to be found in finger marks, so far as I have been able to discover."[58]

Since Galton's early work in this area, other researchers have studied the dermatoglyphic correlates of mental and behavioral traits. Significant differences have been reported in the dermatoglyphic features of a number of abnormal populations when compared with normal populations. These dermatoglyphic differences are most pronounced in the case of populations characterized by chromosomal abnormalities.[59]

More than 30 years ago Cummins and Midlo (1943) reported that " Mongoloid idiots present outstanding distinctions in fingerprints and palmar configurations." The fingerprint differences consisted of a reduction in the frequency of whorls and an increase in the frequency of ulnar loops. The palmar configuration differences comprised a decrease in frequency of patterns in the thenar/first interdigital and fourth interdigital areas and an increase in pattern frequency in the second and third interdigital areas. Palmar hypothenar patterns were " nearly twice as abundant as in the normal." These patterns were also distinctive " in the large representation of expanded patterns . . . and arches associated with an axial triradius located centrally in the palm (t')."[60]

A more accentuated transverse coursing of the palmar main lines was also found among mongoloid idiots. Consequently the main-line index was much higher. Finally, the simian line, which occurs in low frequency among normal individuals, was reported to occur " quite frequently in mongoloid idiots."[61]

Since Cummins's early work on this subject, the chromosomal basis of mongoloid idiocy or Down syndrome has been

[57] Curt Stern, *Principles of Human Genetics,* Freeman, San Francisco, 1960, p. 547.
[58] Francis Galton, *Finger Prints,* Macmillan, London, 1892, p. 197.
[59] Blanka Schaumann and Milton Alter, *Dermatoglyphics in Medical Disorders,* Springer Verlag, New York, 1976, pp. 146-195.
[60] Harold Cummins and Charles Midlo, *Finger Prints, Palms and Soles: An Introduction to Dermatoglyphics,* Blakiston, Philadelphia, 1943, p. 279.
[61] *Ibid.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

established. Mongoloid idiocy is now known to be caused in the majority of cases by a trisomy of chromosome 21. The syndrome consists of multiple congenital malformations, with the afflicted individuals exhibiting a striking similarity in physical appearance. The physical traits of mongoloids include: flattened facial features, epicanthic eye-folds, flat occiput, small nose, short limbs, dental abnormalities, and so on. [62]

Mongoloid idiots are also characterized by abnormal mental and behavioral traits. Afflicted individuals "are almost without exception mentally retarded although the degree of retardation varies." Other behavioral abnormalities include "laxity of joint movements and hypotonia."[63]

The original finding by Cummins and Midlo (1943) of significant differences in the dermatoglyphic traits of mongoloid individuals has been confirmed by many subsequent investigations. Schaumann and Alter (1976) have recently reviewed and summarized studies on dermatoglyphics in medical disorders. For Down syndrome they list 19 characteristic dermatoglyphic features, including those traits initially described by Cummins and Midlo (1943).[64]

In three other autosomal trisomies, in which afflicted individuals are characterized by a constellation of physical and behavioral abnormalities, significant differences in dermatoglyphic features have also been discovered. These comprise trisomy 18 with ten distinctive dermatoglyphic features, trisomy 13 with 12 distinctive dermatoglyphic features, and trisomy 8 mosaicism with 12 distinctive dermatoglyphic features. These dermatoglyphic differences are described in detail by Schaumann and Alter (1976).[65]

In all four of the above listed autosomal trisomies, afflicted individuals are characterized by developmental and mental retardation. One dermatoglyphic trait common to all four chromosomal abnormalities is a distally displaced axial triradius (t"). As a result of the high axial triradius, "significantly increased maximal *atd* angles are commonly found." In the case of trisomy 13 an increased a-b ridge count was also noted. However, in Down syndrome a decreased a-b ridge count was reported in one investigation, but was not confirmed in a later and larger study.[66]

Aberrations of the sex chromosomes comprise monosomy of the X chromosome (45, XO or Turner syndrome); polysomies

[62] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 146-147.
[63] *Ibid.*
[64] Blanka Schaumann and Milton Alter, *op. cit.*, p. 148
[65] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 146-172.
[66] *Ibid.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of the Y chromosome (47, XYY; 48, XYYY); polysomies of the X chromosome (47, XXX); and polysomies of the X and Y chromosomes (47, XXY or Klinefelter syndrome; 48, XXYY; 48, XXXY; 49, XXXYY; 49, XXXXY). Afflicted individuals are characterized by a large number of physical abnormalities and in most cases some degree of mental retardation. According to Schaumann and Alter (1976), "Abnormalities of the sex chromosomes do not have as much influence on ridge formation as do autosomal chromosomal aberrations." However, significant differences in dermatoglyphic features have been noted for each of the above listed sex chromosome defects. In most cases the dermatoglyphic variations include differences in total finger ridge count, in mean a-b ridge count, and in frequency of the simian crease.[67]

Significant dermatoglyphic differences have also been reported in the case of some structural chromosomal aberrations and several single-gene disorders. The former comprise deletion of the short arm of chromosome 5, deletion of the short arm of chromosome 4, deletion of the short arm of chromosome 18, and deletion of the long arm of chromosome 18. The latter include de Lange syndrome, Rubinstein-Taybi syndrome, and Smith-Lemli-Opitz syndrome. These studies are also reviewed in Schaumann and Alter (1976).[68]

The possible dermatoglyphic correlates of mental illness and non-chromosomal mental retardation have also been investigated in recent years. Cummins and Midlo (1943) reviewed several early German and Scandinavian studies on the dermatoglyphic features of schizophrenics. A few minor differences in frequencies of fingerprint types, such as higher percentage of the arch pattern, were reported.[69] Subsequent dermatoglyphic studies of schizophrenia yielded apparently inconclusive results. However, Stowens, Sammon, and Proctor (1970) in their review of eight such studies published between 1935 and 1968, contend that ". . . without exception the investigations have been limited to only a few of the many features found on the fingers and palms."[70]

The magnitude of the differences in dermatoglyphic features in the case of mental illness and non-chromosomal mental retardation should be of lesser degree than in the case of chromosomal abnormalities. Consequently, some recent studies have applied more complex multivariate statistical techniques

[67] Blanka Schaumann and Milton Alter, *op. cit.*, pp. 172-184.
[68] Blanka Schauman and Milton Alter, *op. cit.*, pp. 184-206.
[69] Harold Cummins and Charles Midlo, *op. cit.*, pp. 277-278.
[70] Daniel Stowens, John W. Sammon and Albert Proctor, "Dermatoglyphics in Female Schizophrenia," *The Psychiatric Quarterly*, Vol. 44, 1970, p. 516.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

in dermatoglyphic comparisons between normal and abnormal populations. In multivariate statistical comparisons, several variables are considered simultaneously. Thus, several small differences between populations, no one of which is statistically significant, may be quite significant when considered in combination.

Stowens, Sammon, and Proctor (1970) conducted a comparative dermatoglyphic study of 82 hospitalized schizophrenics and 295 normal controls. All of the subjects were adult, female, and White. Twenty-three different dermatoglyphic variables on each hand were included in the investigation. Using the multivariate statistical technique of discriminant analysis, 82 per cent of the schizophrenic sample could be distinguished from the control sample on the basis of totality of dermatoglyphic features. The dermatoglyphic variables which contributed most to the discrimination between the two groups were: the higher frequency of abnormal palmar creases, the increased frequency of arches, the deficiency of the main line C of some degree, and the decreased frequency of radial loops on the index finger among the schizophrenic sample. The authors concluded that "no single dermatoglyphic feature can be used to discriminate the schizophrenic from the control population." However, considering all the dermatoglyphic differences together, "discrimination between the schizophrenic and control population is indeed possible."[71]

Lu (1968) conducted a comparative dermatoglyphic study of 943 individuals in Oregon state institution—363 mongols, 281 non-mongoloid mental retardates, and 299 normals. He classified the patterns on each finger into five different classes, obtaining for each subject a ten-digit number. The number 11111 11111, for example, indicated that the individual had ulnar loops on all ten fingers. 459 different patterns were observed. 110 of these patterns appeared exclusively in the mongoloid subjects, 131 exclusively in the non-mongoloid mental retardates, and 139 exclusively in the normals. Using the statistical technique of information analysis, Dr Lu found that "the information pertaining to the identification of mental-status types contained in the fingerprint patterns is 63 per cent for all three groups, 65 per cent for mongols versus retardates, 72 per cent for mongols versus normals, and 59 per cent for retardates versus normals."[72]

[71] Daniel Stowens, John W. Sammon and Albert Proctor, *op. cit.*, pp. 516-532.

[72] K. H. Lu, "An Information and Discriminant Analysis of Fingerprint Patterns Pertaining to Identification of Mongolism and Mental Retardation," *American Journal of Human Genetics*, Vol. 20, 1968, pp. 24-37.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

6. NATURAL SELECTION AND DERMATOGLYPHICS

Physical anthropologists have traditionally employed anthropometric or morphological traits, such as dimensions of the head and body and pigmentation of the skin, hair, and eyes, to measure the differences between races and peoples and to assess the affinities between populations. Most of these morphological traits are polygenic in mode of inheritance and are fairly stable over time. However, the exact mode of inheritance is generally unknown, so that the actual gene frequencies for most morphological traits cannot be calculated. Furthermore, variability in some morphological traits, such as height and weight, is affected by environmental factors.[73]

Consequently, population geneticists have advocated the use of traits that are completely hereditarily determined and have a known mode of inheritance in comparative racial studies. Such traits include the various blood groups, serum proteins, haptoglobins, hemoglobins, and so on. Most of these traits are single-gene or monogenic in mode of inheritance. However, monogenic traits are more rapidly affected by selection forces and are therefore less stable over time. Furthermore, the distribution of the various blood groups may be affected by differential susceptibility or resistance to a number of diseases. Consequently, geographically separated populations with a known common origin may differ considerably in the distribution of one or more blood groups.[74]

In some respects dermatoglyphic traits offer a better basis for assessing the actual affinities between populations than either morphological or serological traits. Like morphological traits, "the heredity of most dermatoglyphic features conforms to a polygenic system, with individual genes contributing a small additive effect."[75] Hence, natural selection operates more slowly than in the case of traits with a monogenic mode of inheritance. In addition, dermatoglyphic traits appear to be less affected by selection forces than either morphological or serological traits. At least two investigators have made studies of the effects of natural selection on dermatoglyphic traits. Both obtained negative results.

Van Valen (1963) attempted to estimate the effect of natural selection on fingerprints by "comparisons between a set of parents and the set of their offspring." He used Holt's data on total finger ridge counts derived from a sample of 250 English

[73] Ilse Schwidetszky (Editor), *Die neue Rassenkunde*, G. Fischer Verlag, Stuttgart, Germany, 1962, pp. 15-35.

[74] Carleton S. Coon, *The Living Races of Man*, Knopf, New York, 1965, pp. 266-288.

[75] Blanka Schaumann and Milton Alter, *op. cit.*, p. 7.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

families. Van Valen divided the subjects into four classes—fathers, sons, mothers, daughters. He calculated the means and variances of total finger ridge count for each class and compared the differences in mean values between fathers and sons and between mothers and daughters. No significant difference was found between the generations for either sex.[76] Hence, on the basis of this study and Dr Holt's earlier research, total finger ridge count can be considered to be a highly heritable dermatoglyphic trait, with a polygenic basis of inheritance, which is "little subject to selection."[77]

Chai (1972) attempted to assess the evolutionary changes in eight aboriginal tribes inhabiting the mountain ranges of the island of Taiwan. The tribal aboriginals have inhabited Taiwan for at least 4000 years. They show greater linguistic and cultural resemblances to the peoples of Malaysia and Indonesia than to the later migrating Chinese settlers of Taiwan. The different aboriginal tribes inhabit a variety of physical and biotic environments, which differ in geographical variables such as altitude above sea level."[78]

Dr Chai obtained both anthropometric and dermatoglyphic data from samples of each of the eight aboriginal tribes. The anthropometric traits comprised 11 head and eight body measurements, including: head length, head breadth, head height, bizygomatic breadth, bigonial breadth, morphological facial length, stature, sitting height, chest girth, and so on. The dermatoglyphic traits comprised 22 variables, including: fingerprint types, palmar main lines, presence of patterns in the hypothenar and thenar areas, a-b and a-d ridge counts.[79]

Dr Chai contended that "the genes responsible for dermatoglyphic variations compared with those responsible for anthropometric variations are less important for fitness"—i.e., survival and reproduction. Therefore, "selection pressure must have more effect on anthropometric than on dermatoglyphic traits." If this were the case, then the various Taiwan aboriginal tribes would be expected "to show greater anthropometric than dermatoglyphic differences."[80]

To test this hypothesis the Mahalanobis generalized distance statistics, D^2, was computed between each two tribes for both

[76] Leigh Van Valen, "Selection in Natural Populations: Human Fingerprints," *Nature*, Vol. 200, 1963, pp. 1237-1238.

[77] Carleton S. Coon, *op. cit.*, p. 259.

[78] C. K. Chai, "Biological Distances between Indigenous Populations of Taiwan," in J. S. Weiner and J. Huizinga (Editors), *The Assessment of Population Affinities in Man*, Oxford University Press, London, 1972, pp. 182-186.

[79] *Ibid.*, pp. 188 and 194-200.

[80] *Ibid.*, p. 204.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the anthropometric and dermatoglyphic data. ($D^2 = \sum_{i=1}^{n} (\bar{X}_1 - \bar{X}_2)$ W^{-1} $(\bar{X}_1 - \bar{X}_2)'$, where $(\bar{X}_1 - \bar{X}_2)$ is a row vector of differences in mean values of the n traits under consideration between two populations, W^{-1} is the inverse of the variance-covariance matrix, and $(\bar{X}_1 - \bar{X}_2)'$ is the transposed column vector of the initial row vector). Dr Chai believed that the rôle of natural selection in group differentiation can be evaluated by comparing the results of the anthropometric and the dermatoglyphic analyses.[81]

The values of the D-statistics were greater for the anthropometric traits with values ranging from 0.88 to 3.58, than for the dermatoglyphic traits, with values ranging from 0.85 to 1.46. There were both similarities and differences in the relative order of magnitude of the distance statistics for the two trait systems. Dr Chai concluded that "the distances between tribes based on dermatoglyphics were essentially the result of random genetic drift with little natural selection; while those based on anthropometry resulted from both genetic and natural selection."[82]

(To be continued)

[81] *Ibid.*, pp. 190-194 and 200-201.
[82] *Ibid.*, pp. 204-206.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

A Dermatoglyphic Approach to the Problem of Rajput Origin

PART I

by PRASANTA KUMAR CHATTOPADHYAY AND KRIT PAL SINGH KUSHWAHA*

INTRODUCTION

The Rajputs are an important population distributed over the Punjab, Haryana, Delhi, Uttar Pradesh and Rajasthan. They occupy an important place in Indian anthropology and ethnic history because of their obscure origin. Risley (1915)[1] classified them under the Indo-Arya type along with the Jats and the Khatris (Indo-Aryan of Haddon). Risley (1890)[2] recorded how new social groups were trying to obtain admission to Rajput status. According to Crooke[3] the Rajputs are "a mixed body." Mitra and Ghosh (1968)[4] observe:

> Thus, the Rajputs include not only populations bearing the affiliations of mediaeval Indian dynasties, but also people like the Hun, who may be descendants of invading Huns, as well as others like the Abhira who arrived much earlier, if only from the Indo-Aryan borderland. Finally there is at least one group of Rajputs with a name originally having Austro-Asiatic affinities — the Admer. The Rajputs therefore did not originally constitute a single tribe divided into clans, but comprised several populations, some of which had been tribal groups which became absorbed into the Rajput body politic.

In the present paper an attempt has been made to find out the extent of similarities and dissimilarities with other neighbouring populations and to trace their origin from the dermatoglyphic point of view.

* This paper is dedicated to the memory to our teacher, the late Dr A. K. Mitra, who inspired P. K. Chattopadhyay to take up the subject and gave valuable guidance in the field during the collection of part of the data.

[1] H. H. Risley, *People of India,* 1915.

[2] H. H. Risley, "The Study of Ethnology in India," *Journal of the Anthropological Institute,* 1890, Vol. 20, p. 235.

[3] W. Crooke, "Rajput," in *Encyclopaedia of Religion and Ethnics,* 1955, Vol. 10, pp. 565-566.

[4] A. K. Mitra and B. R. Ghosh, "Rajput Origins and the Tomars of Delhi," *The Anthropologist,* Special Edition, 1968, pp. 181-195.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

METHOD

The identification of the finger patterns, the tracing of the palmar main lines and identification of the palmar patterns has been made according to Cummins and Midlo (1961)[5] while the endings of main line C has been formulated according to Plato (1970)[6], the formulations of line A and B endings, calculations of the main line index and the determination of the position of axial triradius has been omitted due to reasons explained elsewhere (Chattopadhyay, and Chatterjee and Chattopadhyay (1969).[7]

The material analysed consists of bilateral finger and palmar prints of 187 Rajputs, 100 each of Ahirs and Jats, and 152 Gujars. All the subjects were males. The data on Rajput and Jats were collected from villages of Haryana on the Delhi border in Rohtak district, while the data on the Ahirs were collected from the villages of Gurgaon district situated on the southern border of Delhi. The data on the Gujars were collected from south Delhi villages (Chattopadhyay).[8]

RESULTS AND DISCUSSION

The digital distribution of the finger patterns in the two hands of the Rajputs, Jats, Gujars and Ahirs are given in tables 1a, 1b, 1c and 1d. It is evident from the tables that radial loops and arches are more frequent on digit II, and the Ulnar loops on digit V in both the hands. Whorls are more preponderant on digit I and IV.

Twin loops and lateral pocket loops are more frequent in the left hands than in the right in all the four populations. When the prints are classed into three main types of patterns — i.e. arch, loop and whorl — loops are found to be more frequent than whorls. The Ahirs and the Rajputs and the Jats and the Gujars resemble each other closely. This is true for the pattern intensity index and Furuhata's index as well, while in Dankmeijer's index, the Jats and Ahirs resemble each other.

The frequency of the endings of main line D is given in Table

[5] H. Cummins and C. Midlo, *Finger Prints, Palms and Soles*, Dover Publications, New York, 1961.

[6] C. Plato, "Polymorphism of the C Line of Palmar Dermatoglyphics with a New Classification of the C Line Terminations," *American Journal of Physical Anthropology*, 1970, p. 413.

[7] P. K. Chattopadhyay, "Palmar Dermatoglyphics of the Gujars," *Human Heredity*, Vol. 20, 1970, pp. 123-128, and "Ridge Count in Palmar Dermatoglyphics," *Proceedings of the International Symposium on Human Genetics*" 1971 Waltair, India (in Press); B. K. Chatterjee and P. K. Chattopadhyay, "Dermatoglyphes palmaires des Malapanterams," *Bull. et Mem. Sec. Anthrop.*, Vol. 12, 1969, pp. 371-373.

[8] P. K. Chattopadhyay, "Palmar Dermatoglyphics of the Gujars," *op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

3. It is quite evident that in all the four populations, the endings at position 11 are more frequent in the right hand than in the left, while the reverse is observed with positions 9 and 7.

When the endings of line D are classed into the three modal types (Table 4), the Jats and Ahirs are found to resemble each other very closely for all the three modal types, while the Rajputs markedly differ from the Jats, the Ahirs and the Gujars for modal types 11 and 7.

The modal types for line C are given in Table 5. It is observed that the R type is more frequent in the right hand while the reverse is the case with U, P and A types. The Rajputs show similarities with the Jats in the frequency of R and P type and with the Gujars in the frequency of P and A type.

The frequency of patterns in the hypothenar area is given in Table 6. In all four populations radial loops are the most frequent of all the patterns present in this area, followed by the ulnar loops. In the total frequency of patterns in this area, the Rajputs, the Ahirs and the Gujars resemble each other very closely.

For the total frequency of patterns in the thenar/Ist interdigital area, the Jat, the Gujars and the Rajputs show a close affinity (Table 7). The most preponderant type of patterns in this area are the loops opening proximally and the Bettman's figure.

The patterns present in the IInd, IIIrd and IVth interdigital areas are loops opening distally. The Rajputs resemble the Jats for the frequency of patterns in the II interdigital area, while with the Gujar, they show a close resemblance for patterns in the III interdigital area (Table 8).

The finger patterns and the indices in some populations of Northern India are given in Table 9. It is quite evident that the Punjabi males (Singh, 1955)[9] Ahirs (present study and Singh, 1961)[10] and the Punjabi Khatri males of Patiala (Kushwaha, (1972)[11] show a close similarity to the Rajputs.

The modal types of line D and C, and the frequency of patterns in the various areas of the palm in some North Indian populations are given in Tables 10a, 10b, and 10c. It is evident from these tables that the Rajputs (in our present study) beside showing similarities with the Ahirs, Jats and Gujars resemble the Sahs of Kumaon and the Khatris of Patiala closely.

The results presented from the analysis of the finger and palm

[9] I. P. Singh, "Finger Ball Patterns as an Anthropological Variable," *The Anthropologist,* University of Delhi, Vol. 2, 1955, pp. 36-54.

[10] R. D. Singh, "Digital Frequency and Size Variations in Some Castes of U.P.," *The Eastern Anthropologist,* Vol. 14, 1961, pp. 169-181.

[11] K. P. S. Kushawa, "A Study of the Finger and Palmar Dermatoglyphics of the Khatris of Patiala City, Punjab," M.Sc. Diss. (unpublished), 1972, University of Patiala.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

prints indicate that the Rajputs do not differ much from the Ahir, the Gujars and the Jats, the resemblance is greater with the Ahirs than with the Jats, and the Gujars. Studies on morphological characteristics done by Mitra (1967)[12] and Mitra and Ghosh (1968)[13] also indicate this trend. Serological data available on the Jats (Chattopadhyay),[14] and Negi (1967),[15] Seth *et.al.* (1969),[16] Singh *et.al.* (1969),[17] and on colour blindness, P.T.C. taste sensitivity, and other physical characters (Chattopadhyay)[18] show a great similarity between these populations. Similarities in so many genetic markers is quite difficult to explain as convergence due to differential selection, migration, and other evolutionary forces rather than to an actual relationship between them. It seems probable that all these populations have a common origin, i.e. they are fragments of the same population, settled in their present habitats and due to the different localities of their settlement and occupational pattern, have come to be known differently in the course of time. Besides a common genetic background, the inflow of genes from the neighbouring caste Hindus and the Muslim populations among them must have been very infrequent and that the original effective population must have been quite large, which may explain the close similarities of these populations.

Mitra and Ghosh (1968)[19] explained the great similarity between the Tomar Rajputs and the Ahirs as "the occurrence of fewer significant differences between the Tomar, the Rajputs and

[12] A. K. Mitra, "The Authors of the Food-producing Revolution and Some Agricultural Populations of N.W. India." Presidential Address to the Anthropology and Archaeology section, Indian Science Congress, Hyderabad, 1967.

[13] A. K. Mitra and B. R. Ghosh, *op. cit.*

[14] P. K. Chattopadhyay, "ABO Blood Groups and the Secretor Factor Among the Jats of Delhi," M.Sc. Diss. (unpublished), University of Delhi, 1963; and "A Genetic Study of the Jats of Delhi and Punjab," PhD. Diss. (unpublished), University of Delhi, 1969.

[15] R. S. Negi in personal communication to P. K. Chattopadhyay in 1967.

[16] P. K. Seth, S. Seth, M.B. Rao and S. B. Mani, "Genetical Study of Gujars Al, A2, BO Blood Group, P.T.C. Somatrometry and Phalangeal Hair, Ear Lobes, Hand Clasping, Arm Folding and Leg Folding," *Human Heredity.* Vol. 19, 1969, pp. 190-197.

[17] Uma Singh, A. K. Kalla and Y. R. Ahuja, "A Genetic Investigation of the Gujar-I, Blood Group and A.B.H. Secretion," *The Anthropologist,* Vol. 16, 1972, pp. 57-61.

[18] P. K. Chattopadhyay, "A Note on the Ear Lobe Attachment Among the Jats and the Ahirs," *Acta Genetica,* Vol. 17, 1968, pp. 277-282, "Frequency of Colour Blindness Among the Jats," *Human Heredity,* Vol. 20, 1970, pp. 23-28, "Some Physical Studies Among the Gujars," *Man in India,* Vol. 50, 1970, pp. 185-188, and "P.T.C. Taste Sensitivity Among the Jats," *Anthrop. Aus.,* 1971.

[19] A. K. Mitra and B. R. Ghosh, *op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the Ahirs, who are traceable to a migration of circa B.C. 300, suggests that the Tomaras belong to the same ancient stratum of populations".

Researches on various anthropological characteristics have to be studied in different populations of Northern and North Western India, including those of Pakistan, and Afganistan, supported by historical facts. These may help to solve the riddle of the problem of Rajput origin.

ACKNOWLEDGEMENTS

We are extremely indebted to the late Dr A. K. Mitra, Reader in the Department of Anthropology, University of Delhi, Delhi, with whom P. K. Chattopadhyay had many helpful discussions on this problem and for his keen interest evinced during the collection and analysis of the data. We also thank the staff and students of Government Middle School Akbarpur Barota (Rohtak), Government Primary School, Chhatera (Rohtak), and of the Sarai Kale Khan and Fatehpur Beri (Delhi) for their help and co-operation during the collection of the data, and our several Jat, Ahir, Rajput and Gujar friends for their kind co-operation. Lastly, we also thank Dr Mario Cappieri, of the Department of Anthropology, University of Rome for critically going through the manuscript, and for his valuable suggestions for its improvement.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

TABLE 1a

Distribution of finger pattern types among 187 Rajputs

Digits	*Side*	*Whorls*				*Loops*			*Arches*		
		True whorls	*Lat. pocket and twin loops*	*Cent. pocket*	*Total*	*Radial*	*Ulnar*	*Total*	*Simple*	*Tented*	*Total*
I	R	50.00	9.78	1.09	60.87	—	36.41	36.41	2.72	—	2.72
	L	34.24	15.76	1.09	51.09	—	43.48	43.48	5.43	—	5.43
	R+L	42.12	12.77	1.09	55.98	—	39.94	39.94	4.08	—	4.08
II	R	34.24	2.72	4.89	41.85	8.69	44.02	52.71	5.43	—	5.43
	L	29.35	4.89	4.35	38.59	11.95	40.76	52.71	8.15	0.54	8.69
	R+L	31.79	3.81	4.62	40.22	10.32	42.39	52.71	6.79	0.27	7.06
III	R	17.39	2.17	2.17	21.73	0.54	75.00	75.54	2.72	—	2.72
	L	17.93	4.35	1.09	23.37	0.54	70.11	70.65	5.98	—	5.98
	R+L	17.66	3.26	1.63	22.55	0.54	72.55	73.09	4.35	—	4.35
IV	R	48.91	0.54	9.78	59.23	0.54	38.04	38.58	2.17	—	2.17
	L	30.43	1.63	6.52	38.59	0.54	60.33	60.87	0.54	—	0.54
	R+L	39.67	1.09	8.15	48.91	0.54	49.19	49.73	1.36	—	1.36
V	R	17.93	0.54	6.52	24.99	—	75.00	75.00	—	—	—
	L	10.35	0.54	8.15	19.04	0.54	80.43	80.97	—	—	—
	R+L	14.14	0.54	7.34	22.02	0.27	77.72	77.98	—	—	—

TABLE 1b

Distribution of finger pattern types among the 100 Ahirs

Digit	Side	Whorls				Loops			Arches		
		True whorls	*Lat. pocket and twin loops*	*Cent. pocket*	*Total*	*Radial*	*Ulnar*	*Total*	*Simple*	*Tented*	*Total*
I	R	47.00	7.00	2.00	56.00	—	41.00	41.00	3.00	—	3.00
	L	28.00	14.00	—	42.00	—	56.00	56.00	2.00	—	2.00
	R+L	37.50	10.50	1.00	49.00	—	48.50	48.50	2.50	—	2.50
II	R	36.00	4.00	4.00	44.00	15.00	34.00	49.00	7.00	—	7.00
	L	33.00	9.00	2.00	44.00	7.00	38.00	45.00	8.00	3.00	11.00
	R+L	34.50	6.50	3.00	44.00	11.00	36.00	47.00	7.50	1.50	9.00
III	R	18.00	3.00	4.00	25.00	—	71.00	71.00	4.00	—	4.00
	L	18.00	3.00	8.00	29.00	4.00	59.00	63.00	7.00	1.00	8.00
	R+L	18.00	3.00	6.00	27.00	2.00	65.00	67.00	5.50	0.50	6.00
IV	R	51.00	—	10.00	61.00	—	37.00	37.00	2.00	—	2.00
	L	35.00	4.00	15.00	54.00	—	45.00	45.00	1.00	—	1.00
	R+L	43.00	2.00	12.50	57.50	—	41.00	41.00	1.50	—	1.50
V	R	15.00	2.00	9.00	26.00	—	74.00	74.00	—	—	—
	L	8.00	3.00	13.00	24.00	—	75.00	75.00	1.00	—	1.00
	R+L	11.50	2.50	11.00	25.00	—	74.50	74.50	0.50	—	0.50

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

over a given period between related languages or between successive historical phases of the same language. These laws were first used to reconstruct a hypothetical[26] parent language from which other historically attested languages have been derived. In other words, when a linguist investigates phonemes (the sound of language) diachronocally or historically, he is interested in sound change and the possibility of making statements in correct sequence about the regular shifts referred to above as sound-laws.

Our richest fund of historical data so far comes from over a century of intensive studies of the Indo-European group of languages. These have been found to possess in common certain phonematic, morphomatic, syntactic and verbal (i.e., vocabular) features which, no matter how changed in the course of time, can be explained only on the assumption that they are descended from a common source, of which we have no direct record.[27] Thus, for instance, in contrast with common words for *tobacco, coffee* or *potato* which are known from historical evidence to be common through borrowing, there is no means of accounting for the fact of Sanskrit *asva-s,* Persian *aspa-,* Greek *ippos,* Illyrian *Ecco,* Tarentine *eppo* (*probably* Messapic), Gaulish *Eppo,* Irish *ech,* Welsh *ebol,* Gothic *aíha,* Latin *equus,* Umbrian *ekvine* (?), and so on, except by deriving them from a single source which is now written *ekou-, the prefixed asterisk indicating that the word is known only by the comparison and history of the actually recorded words; and further that these recorded words all represent a common meaning, the hairy quadruped known in English as " horse."

For any valid diachronic investigation, the search is to be conducted according to all the rules of classical comparative methodology. Here I propose four criteria as diagnostic for the common origin of any group of languages to be examined: (a) phonetic correspondences; (b) shared vocabulary; (c) common grammatical features; (d) identical or similar constructive particles.

With all eyes at present on Africa as the possible cradle of mankind, indeed, many such partial studies have already been carried out, notably those of Stopa for Bushman (1972), Dolgopolsky for Cushitic (1973), Hodge[28] for Berber and Chadic (1975),

[26] Always marked by asterisks.

[27] That is to say, not by " chance," not by " drift," not by " borrowing," but by " inheritance " only.

[28] Carleton T. Hodge, " Lisramic II," in *Anthropological Linguistics,* 1975, Vol. 17, No. 5, pp. 237-272.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Rabin for (Hebrew) Hamito-Cushitic (1976).[29] However, to the best of my knowledge no comprehensive study exists as yet on, say, the entire Xoisan-Indo-European[30] phylum. And yet, no doubt, set up in such a way that their respective protophonemes would be the data for such an investigation, phenomena of invaluable interest for anthropology and associated disciplines, could be made available. The objectives of such a study would be to demonstrate by the rigorous application of the approved standard techniques of the comparative method, the genetic relationship of as wide as possible a sampling of these groups. These findings could then in turn be matched to any recent paleoanthropological data, and pertinent inferences drawn from them.

If it will indeed prove possible to demonstrate an adequate amount of uniform correspondence, and if this amount is sufficiently significant to guarantee that findings are not due to chance, clearly the conclusion must be drawn that they are the result of some historical connexion. Or, in other words, we shall have to assume that these languages are, in fact, related and that where they thus agree, evidently, they have been preserving features of the common primordial parent tongue, i.e., truly by inheritance and not by borrowing, and so on (Landsberg 1976).[31]

As so far, the palaeo-anthropological (and hence, genetic?) background for these linguistic phenomena has not been entirely clear yet, the question may now well arise whether, in fact, *the latter may be considered sufficient evidence for a theory of (uni)linear development from Homo barbarus to Homo loquens.* It may then perhaps be so that some later diversifications were set off by the influx of new genotypes.

Eventually, we may be able to sift out three new possibilities in such a way that ultimately we can decide on (a) an equally substantial case for either theory; (b) one minute weight that

[29] And see further (especially) the work of the Nostratic linguists, and others, as found mentioned in Marge E. Landsberg, *Materials for a bibliography of trans-linguistic studies,* Indiana University Linguistics Club, Bloomington, Indiana, 1977.

[30] Ironically, since no genetic affinity has as yet been satisfactorily demonstrated for Bushman and Hottentot, the term "Xoisan" used here by me in apparent analogy with "other" great language families, like for instance, Hamito-Semitic or Indo-European, is today by most Africanists considered an ethnographic misnomer denoting no linguistic reality. It may be remembered with some wonder that at the time a similar controversy raged concerning first "Tocharian" (1904), later "Hittite" (1912), indeed, still considered by many scholars today—although a common and comprehensive—a far from accurate specification.

[31] Marge E. Landsberg, "Unde origo? The Crisis in Linguistics Today," *The Epigraphic Society,* Bicentennial Issue in Honor of the Thomas Jefferson Sesquicentenary, Vol. 3, No. 2, 1976, pp. 62-77.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

may yet tip the scales for any of them; or (c) find out that it may perhaps be so that instead of mutually exclusive, or seemingly unconnected, one theory and fund of data can be recognized as complementary, or supporting in essence the other, or even demonstrate a necessary sequence.

However, since this is in essence a synchronic paper, and a very modest one in scope at that, clearly, until the results of the diachronic papers are in, it is impossible to predict with justified confidence what the final verdict will be. So let us first examine the various above-mentioned synchronic possibilities somewhat more thoroughly.

Now, Sinclair (1971)[32] points out that from about 18 months onwards the infant's semiotic function begins to manifest itself, and one can observe problem solutions which are prior to actually carrying out the act, implying the ability to represent reality mentally. She gives a striking example by quoting Piaget's (1964)[33] observation of a young child, who was seen by him opening her mouth wider and wider in her efforts to retrieve a small chain from a half-closed matchbox, thus evidently performing a motor act of representation, or motor symbolism, i.e., a symbolic representation of an act by a movement which is not part of the act.

One could very well imagine as a next step how such a gesture might become enphoned (*Lautgebärden*), and then meaning imprinted on the sound sequence, so that a close ("iconic")[34] connexion would arise in certain cases between sign and signified, or sound, gesture and goal or activity or, in other words, between the phonetic inventory of human speech, the physiological structures involved, and the activities symbolized (Ellenbogen 1972).[35] In such cases, clearly, the meaning relationship between sign and object or activity obtains an element of "necessity" or non-arbitrariness (Wescott 1971).[36]

[32] Hermine Sinclair, "Sensorimotor Action Patterns as a Condition for the Acquisition of Syntax," in Renira Huxley and Elizabeth Ingram (editors), *Language Acquisition Models and Methods*, Academic Press, London, 1971, pp. 121-135.

[33] Jean Piaget, *The Development of Symbolism in the Child*, *op. cit.*

[34] The term "icon" having the semiotic meaning ascribed to it by Charles S. Peirce (*Collected Papers*, Harvard University Press, Vol. 2, 1931), i.e., a non-arbitrary intentional sign, or a designation bearing an intrinsic resemblance to its referent (the object it designates)—that is, imitative of non-linguistic reality.

[35] Maximiliam Ellenbogen, *The Loom of Mind*, Manuscript, Queen's College of the City University of New York, 1972.

[36] Roger W. Wescott, "Linguistic Iconicity," *Language*, Vol. 47, No. 2, 1971, pp. 417-428.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

As the choice of sound is part of our pre-human heritage, the description of language is of course also to deal with those parts of sound that belong to the organization of language itself. Sound being embedded in gesture, what we will look at then, concerns in fact, the consequences of motor pattern constraints on sound pattern variables. It seems therefore a good idea to ask how iconic these are (Bronowski 1967)[37], or indeed, perhaps even how deictic (Sherzer 1973).[38]

In the "Darwinian" sense (1969),[39] some of these probably once belonged as intrinsically to our repertoire as blushing or crying (Landsberg).[40] Indeed, such a closer investigation will probably result in the discovery that linguistic iconicity has manifestations on all three levels of language: phonology, syntax, semantics (Jespersen 1922; Paget 1963; Bolinger 1968; Shapiro 1969; Piaget 1971).[41] In other words, as in its origin the gesture that generated the sound symbolized something (i.e. its referent), there may well be a much closer connexion between appearance, perception, and symbolism than was previously thought. One may therefore well ask how valid then is our present a priori distinction between phoneme and morpheme. For if even a single speech sound would turn out to be in fact "meaningful," clearly, the collection and analysis of such data becomes imperative for current linguistic theorists and residents of adjoining intellectual realms alike (Hörmann 1971).[42]

Paget (1963)[43]—and before him Darwin (1969), Wundt (1911),

[37] Jacob Bronowski, "Human and Animal Languages," *To Honor Roman Jakobson*, Vol. 1, pp. 374-394.

[38] Joel Sherzer, "Verbal and Nonverbal Deixis: The Pointed Lip Gesture Among the San Blas Cuna," *Language in Society*, Vol. 2, 1973, pp. 117-131. Likewise the term "index," denoting something that points or indicates—as clouds point at possible rain, fever indicates excitement or illness, or a scream fright or pain.

[39] Charles Darwin, "The Expression of the Emotions in Man and Animals," University of Chicago Press, Chicago, 1969.

[40] Marge E. Landsberg, "On Reconstructing 'Proto-Human'," Paper presented at the second Lacus Forum of the Linguistic Association of Canada and the United States at Toronto, 3-7 August 1975, in Peter A. Reich (Editor), *The Second Lacus Forum*, Hornbeam Congress Series, Columbia, S.C.; "The Case for Homo Loquens: A Judgment of Evidence," *Anthropos*.

[41] Otto Jespersen, *Language: Its Nature, Development and Origin*, Allen and Unwin, London, 1969, pp. 406-408; Richard A. S. Paget, *Human Speech*, Routledge and Kegan Paul, London, 1963; Dwight L. Bollinger, *Aspects of Language*, Harcourt, Brace and World, New York, 1968, p. 17; Michael Shapiro, *op. cit.*; Jean Piaget, *Biology and Knowledge*, *op. cit.*

[42] Hans Hörman, *Psycholinguistics: An Introduction to Research and Theory*, Springer, Berlin, 1971, p. 215.

[43] Richard A. S. Paget, *op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Paul (1920),[44] and others—had envisaged a possible coming into existence of certain words as tongue or lip "gestures" which, having at first accompanied (either imitated or represented) hand gestures, then as enphoned organic movements came to symbolize the thing or action itself (i.e. "bio-morphologic types").

The great German linguist, Hermann Paul (1920),[45] wrote:

> Eine andere Art von Urschöpfung, wie sie früher schon mehrfach vermutet ist, soll nach Wundt darin bestehen, dass Organe und Tätigkeiten, die zur Bildung der Sprachlaute in Beziehung stehen, mit Wörtern bennant werden, bei deren Artikulation die gleichen Organe und Tätigkeiten mitwirken. Auf diese Weise sollen z. B. Bezeichnungen für essen, blasen, Mund, Zunge entstanden sein. Eine gewisse Wahrscheinlichkeit ist dieser Hypothese nicht abzusprechen, wenn sich auch in Bezug auf die einzelnen zum Beweise beigebrachten Fälle eine Sicherheit kaum gewinnen lässt.

Darwin (1969)[46] warned repeatedly against confusion between symbolic or "conventional" (specific or artificial) signs—gestures and expressions—with those which are iconic, "intuitive" (universal or innate), and which in his opinion, alone deserved to rank as true expressions. The latter, in his view, like certain of our innate and universal gestures, probably belong to the primordial (pre-conventional) human repertory of signs, or the core vocabulary. These, as Darwin emphasized, commonly had some significant inherent natural source which, with the relentless passing of the ages, may have become more and more doubtful, or indeed, eventually, got lost almost beyond retrieval.

Probably the most commonplace natural source for such an ancient core vocabulary, in general, were the words that designed parts of the human organism, Figurative use of such words as "head, hand, foot, mouth," without reference to parts of the body, is a well known phenomenon to historical linguists and etymologists and seems to be a universal feature of human speech anywhere. These words are often found to be as it were the nuclei of the associations underlying the semantic changes radiating from them. Since we seem to have a facility for picking out those of the features that have become dominant in the new usage, most often these derivations will be found to be so transparent and obvious, both phonetically and semantically, that satisfactory classification may ensue immediately.

[44] Charles Darwin, *op. cit.*; Wilherlm Wundt, *Völkerpsychologie: I. Die Sprache*, Engelmann, Leipzig, 1911; Hermann Paul, Prinzipien der Sprachgeschichte, Niemeyer, Halle a. S., 1920.

[45] Hermann Paul, *op. cit.*, p. 182.

[46] Charles Darwin, *op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Dagut (1971)[47] calls these "primary metaphors" and, pointing at their great metaphorical productivity, adds the very insightful remark that it is the transference rules for thus converting literal into figurative usage that may be in themselves linguistic universals.

I am thinking here, for instance, of the Semitic word for "hand": Hebrew *kaf,* "palm of the hand, sole of the foot, paw, spoon; Akkadian *kauup(m)*, "palm of the hand, paw, bowl."[48]

Swadesh (1972)[49] mentions as an example of such a theory, Latin *capio*—"I capture, take," whose root[50] begins with a voiceless elveolar plosive k made by opening the mouth, and ends in a voiceless bilabial plosive p produced by lip closure. He suggests that the mouth's wide opening in order to produce the k found at the back, is comparable to an open hand, while the subsequent lip closure appears analogous to the fingers closing with the thumb, as one takes hold of an object, so that the pronunciation of the root *kap* was in fact very much like the action of catching something. Gradually, then, the original concrete sensible significance of the expression was lost, and it became a sign for general related concepts. In this way abstract thinking was developed and duality could arise. Indeed, it was possibly when analogies were noticed, and ambiguity became possible, that language was thrown wide open.

We can therefore define human speech as a complex oral activity which, often accompanying (be it imitating or being imitated), associated with, or ultimately symbolizing certain activities, comes to represent various other associated concepts, whence, in certain situations, their "inevitability," as I have pointed out above.

[47] M. B. Dagut, "A Linguistic Analysis of Some Semantic Problems of Hebrew-English Translation." Doctoral dissertation, Hebrew University of Jerusalem, 1971, p. 116.

[48] This we know to have gradually radiated out, ultimately to have come to stand as phonetic marker for an immense semantic field covering such widely diversive associations as: "catch, close, cover, guard, snatch, seize, hunt, have, hold, keep, contain, grasp (later also mentally, as for instance in German *kapieren*), handle, hawk (peddle), mouth, eat, tool (e.g. intriguing semantic junctures, as "to eat; cut; hoe or dig"), vessel, beat, steal, touch, beg, give, take" (and later into "barter," then "buy"—*kaufen*), always preserving as core sound and core meaning the original *kap*—"hand" feature—a phenomenon readers can of course easily enough check on themselves.

[49] Morris Swadesh, *The Origin and Diversification of Language,* Routledge and Kegan Paul, London, 1972, p. 4.

[50] The term "root," as a designation for the central part of a word comes from Hebrew grammar. Perhaps in most languages, most of the roots are morphemes.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Regarding the human body as its own most constant environment with regard to speech, another kind of underlying somatic basis we may, I think, assume in the field of certain "l-words," for instance, evidently resulting from enphoned tongue-gestures, and indeed again carrying appropriate semantic loads no language from Bushman to Amerind seems to lack. Just as obvious and ubiquitous are "snore, throat, gargle, hiccup, belch, retch, gag, vomit, choke and cough words," not to forget the omnipresent "h-words," to express "breathing, whispering, panting," and even such related concepts as occur in the associated field of "fragrance, steam, vapour, fume, fog, mist, smoke," and so on, and similar *Schallwörter*.

Others may follow on a scale of diminishing overtness or obviousness, like for instance, panlinguistic "call-words" (or words for "speak, weep, cry, shout," etc),[51] and a great many "bird-names," all to Indo-European "Schallwurzel": *ger-.[51] On the other end of the somatic scale we will find words like *bhu-, "to swell," *pleu-, "to flow," and so on, of which we can understand the gesture though not the sound (which is perhaps irrelevant).

Probably it is such as mentioned above that constitute our most ancient and genuine (i.e. somatic-phonological) "semantic universals." The question remains, however, of whether such a statement accounts adequately for their existence. For first of all, what might account for these phenomena, perhaps is what Osgood (1966)[52] calls the "general inherent, antientropic principle of the nature of the human organism." Once aware

[51] Indo-European "roots" (these are grammatical abstractions) regularly have the pattern: consonant/vowel/consonant (CVC) such as can be found, for instance, in *Hles-, "to be," and are commonly extended by a suffix of the pattern vowel/consonant (VC). Hence, the phrase "all to I.E. . . . " means: all these words are derived from the base (or root) *VCV-,. For example: Latin *gallus*, "cock," belongs to an I.E. r(oot) *gal-, with basic meaning "to call, cry;" English items like *garrulity, garrulous* belong to an I.E. r. *gar-, "to cry (out)," to which also belongs English *cur*, originally any dog, literally "growler"; to I.E. r. *qer-, we find words for: "crow, raven, partridge" in many Germanic, Romance, Slavic, etc. languages; *el-, or *hel-, is a "Schallwurzel," meaning "to call, cry" (i.e., echoic or imitative); there is a variation *qel-, *qer-, "to call, shout, ring" (with various extensions, as for instance, *sqel-, "to ring" ("cricket-words" often belong here!); English *hen* belongs to I.E. r. *kan-, or *khan-, "to sing," to which also Latin *canere;* lastly, another good example is *owl*, echoic from its cry, belonging to I.E. r. *ul-, var. *hul-, where also Latin ululare "to howl, screech, cry out," *ulula* "owl," prop. "the screetching bird."

[52] Charles H. Osgood, "Language Universals and Psycholinguistics," in Joseph H. Greenberg (editor). *Universals of Language*, M.I.T., Cambridge, Massachusetts, 1966, p. 305.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of this possibility, I can of course no longer offer these phenomena as an argument in favour of a theory of linear unity, even if I feel intuitively that they may be just as *bona fide* evidence.

To make matters slightly worse, there are data that do not fit even these theories. I am thinking here, for instance of the huge (panlinguistic) associative field covering such concepts as: "curse, abuse, affront, scold, revile, insult, disgrace, quarrel, call bad names, blame, chide," and so on, which is always and everywhere on our globe linguistically represented by sequential markers /K/—/ any vowel—/L=R/. Though I wonder whether there may be some psycholinguistic implications, I can think as yet of no adequate explanation.

Most baffling of all is the fact that there seems to exist a (quantitatively) even more impressive group of just such recurrent, basic acoustic patterns, for which at the moment I am even more sorely put to provide a somatic, psycholinguistic, or indeed any kind of basis at all. And yet, in my investigations I have yet to come upon a language lacking them (Landsberg 1975).[53]

I am thinking here, for instance, of such ancient Indo-European bases as *sek^{w}-, "to see; follow; say"; *blic-, "to shine; polish; lighten;" *bher-, "to carry: endure; give birth to;" *tem-, "to cut; divide; finish," and so on, which I have so far encountered in languages of 12 different (i.e. "disparate") families. Possibly, with or without an explanation or a theory, these are just as *bona fide,* universal productive roots. At any rate, they seem to appear as recurrent dominant themes in a rich variety of expanded forms, functioning as it were, as the signifying element in these matrices (Landsberg 1974).[54]

As I remarked above, these too seem to be moulded or embedded in the human language process, in their final product still quite transparently exhibiting an identical or very similar basic phonetic structure to carry the appropriate (predictable) associative semantic load. I would tend to believe that though these may not stem from the very deepest layer, yet their origin is probably ancient enough, and may well be common, stemming—like the identical capacity for human language itself among all races—from existence before diversification.

But what do we mean when we talk about an "identical capacity for language?" This is best judged from another short consideration of language acquisition theories. Now, Chomsky (1972)[55] believes that the structure of language is determined by

[53] Marge E. Landsberg, "On Reconstructing 'Proto-Human'," *op.cit.*
[54] Marge E. Landsberg, "The Theme Behind the Variations," Mimeograph, Haifa University, 1974.
[55] Noam Chomsky, *Language and Mind, op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the structure of the human mind, and that the universality of certain properties characteristic of language, is evidence that at least this part of human nature is common to all members of the species, regardless of some of the obvious differences. He argues that since the general principles which determine the form of grammatical rules in particular languages, appear to be to some not inconsiderable degree common to all human languages, i.e. universal, and they are moreover, so intricate and complex, they must be biologically transmitted from one generation to the next, presumably via man's DNA & RNA carrying chromosomes, which harbour the raw materials of heredity, the universal code of human life and evolution itself. Hence, for all normal human beings an equal acquisition potential.

In contrast to Chomsky's assumption, developmental psychologists like Sinclair (1971),[56] for instance, contend that what the infant brings to his language acquisition task is not a set of innate linguistic universals, but innate cognitive functions which will ultimately result in universal structures of thought, so that the linguistic universals exist precisely because of the universal thought structures—and that these are universal, not because they are inborn, but because they are the necessary outcome of innate autoregulatory factors and equilibration processes.

Perhaps both are right. For after all, the question must arise here, what then are these above-mentioned innate processes the outcome of? Are they not precisely the expressions or manifestations of that very same universal species specific code we discussed above?

It seems to be merely a matter of what was there first, the chicken or the egg. But that question is not so very interesting, I think. What is interesting, though, is that we all know by now for sure that from the egg a chicken will come forth, and not, say, a cow or a cat.

In his "Preface" to Darwin's (1969) great work, Konrad Lorenz, the father of modern ethology, rightly draws our attention to the fact that Darwin has successfully shown how behaviour patterns are just as conservatively and reliably characters of species as are the forms of bones, teeth, or any other bodily structures. It is indeed one of Darwin's chief merits to have recognized how the various phenomena of behaviour patterns pass along an evolutionary path exactly like that of organs, a notion which entails the simultaneous recognition that they not only have the same heredity, but that what unites the

[56] Hermine Sinclair, *op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

members of a species is, in fact, precisely the similarities in inherited behaviour.

In other words, as Lorenz points out, that both the behaviour and the organic patterns are achieved in exactly the same manner, that is, *on the basis of information which the species has gained through mutation and selection in the course of its evolution, and which are, by now, rigidly gene-controlled.* This seems to be true not only for species specific and species universal behaviour and organic patterns, but indeed, *also for far more intricate mechanisms, as, for instance, those generally subsumed under cognition.*

Accepting such general or universal principles of organization of behaviour (patterns), is one to include a natural extension of these very *same principles* as we find them in the *mechanism of language*? This question must take us back to the notion of "linguistic universals."

Now, general linguists today attempt to develop a theory of natural language *per se*, that is to say, a system of hypotheses concerning the essential properties of any human language (Chomsky and Halle 1968).[37] These properties determine the class of possible natural languages, and the class of potential grammars, etc., for some human language, so that *the linguistic universals themselves are to be regarded as the essential properties of human language,* and the totality of linguistic universals can be said to represent the human language producing capabilities. In other words, what the general linguists are trying to do is through these linguistic universals to characterize the range of possible human language.

Three important questions immediately arise here.

The first question is, what linguistic universals are significant? The answer is that significant are those that must be assumed to be available to the child as part of his innate species specific and species universal endowment to base his language acquisition on (hence the "equal acquisition potential"); i.e. *those that constitute our universal human heritage.*

The second question, of why we search for universals, is to be answered by that it is in order to get a better understanding of what it is that makes language acquisition as it is, possible at all—under the given conditions of time, data accessibility, and so on.

The answer to the third question, of how we get our data for possible linguistic universals, appears first of all to depend

[37] Noam Chomsky and Morris Halle, *The Sound Patterns of English,* Harper and Row, New York, 1968.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

upon the decision of what level of abstraction we are going to choose to operate on to obtain our information.

For our present purpose I would propose here a model consisting very roughly of three levels of abstraction: high, middle, and low. At the highest level, we would find "formal" linguistic universals, such as, for instance, the assertion that the grammar of any language will be found to meet a certain specific abstract condition, which is simply saying that all languages have rules. On this level, the truth of the hypothesis would of course not in itself imply that any particular rule must appear in all—or even a couple of—grammars (Chomsky 1970).[58] It would simply account for the general pattern making ability of the human mind.

On the intermediate level would appear claims such as that the syntactic component of a grammar is to contain a rule to map semantically interpreted deep structures ("sense") onto phonetically interpreted surface structures ("sound"). Such a rule would account for our capability to match sense to sound—another *conditio sine qua non* for human speech.

Overlooking for our present purpose rules of a type as mentioned by Greenberg (1966) and Bolinger (1968),[59] we can make a big jump downwards on our abstractional scale and arrive at the "substantive" universals, which again might range from a proposal that certain substantive phonetic elements are available for phonetic representation in all languages, and that certain semantic features or categories will provide a universal framework for semantic description (Chomsky 1970; Leech 1971, 1975; Nida 1975),[60] to the phenomena (i.e. the lexis) themselves. The latter are to be found by a comparative investigation of the available sources themselves (i.e. instances of human language), simple surface phenomena that appear empirically to be processed or manifested universally.

The above seems to imply that only certain kinds of symbolic systems can be acquired and used as language by the human organism's cognitive capacities. Moreover, the very existence of the above partly exposed, extremely intricate and profound web of universal properties appears to demonstrate a principle of human speech as "cut to the same pattern" (Chomsky 1970),[61]

[58] Noam Chomsky, *Aspects and the Theory of Syntax, op. cit.*

[59] Joseph H. Greenberg (editor), *Universals of Language, op. cit.*; Dwight L. Bolinger, *op. cit.*

[60] Noam Chomsky, *Aspects and the Theory of Syntax, op. cit.*; Geoffrey M. Leech, *Towards a Semantic Description of English*, Longmans, London, 1969, and *Semantics*, Penguin, Harmondsworth, London, 1975; Eugene A. Nida, *Componential Analysis of Meaning*, Mouton, The Hague, 1975.

[61] Noam Chomsky, *Aspects of the Theory of Syntax, op. cit.*, p. 30

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

namely that evidently universally available to the human mind, regardless of geographical constraints.

At this point, it seems to me, we can immediately see the significance of these combined insights, to be summed up as follows:

1. There are (some) linguistic universals.
2. Linguistic universals constitute the essential and necessary properties of any human language.
3. Those linguistic universals are significant that are assumed to be available to the child as part of his universal, species specific innate language (acquisition) endowment.
4. Some concrete instances[62] of linguistic universals may be:
   (a) "*Transference Rules*"—e.g. *kap-, "hand;" "capability;" "capture;" *man-, "person;" "manual;" "manifest," etc.
   (b) "*Lautgebärden*"—e.g. *kap-, "to catch;" Latin *lingua* "tongue; speech; language;" (cf. Latin *lingere* "to lick;" *loqui* "to speak"); and so on.
   (c) "*Schallwörter*"—e.g. universal network of phonetic markers representing semantic fields, like: "inhale; snore; gag; cough;" etc. or the group of "call-words" and associated "bird-names;" all to Indo-European base *ger-, and so on.
   (d) "*Biostructurals*"—e.g. *bhu-, *pleu-, (plus extensions), and so on.
   (e) "*Productive Etyma*"—e.g. *bher-, *pek^{w}-, *pik-, *sek^{w}-, *tak-, *tem-, *wleq-, *wol(w)-, and so on.

From the above it would seem to be so then, that the human animal's being controlled by the same code, implies his controlling the same code, in principle, as appears to be so clearly manifested linguistically.

I think that we may by now have access to an already fairly impressive fund of apparently well established data, both formal and substantive, on which to base further inferences (Landsberg 1977).[63] However, here I do not intend to go into that matter beyond the scope of this present paper—meant to provide a beginning rather than an end of inquiry.

But let me conclude by saying that if we are interested in establishing a framework of descriptive adequacy for better insight into what it is precisely that constitutes the true characteristics of Lingua Adamica, here is at least some sort of concrete proposal to work with. Indeed, the above seems to me an

[62] Some of these categories may occasionally seem to overlap.
[63] Marge E. Landsberg, *Materials for a Bibliography of Trans-linguistic studies, op. cit.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

eminently practical way of testing the universality of our code which, unfortunately, in past investigations has been more frequently assumed than demonstrated empirically.

With this apparently inevitable uniformity of pattern, this all-over intrinsic universality of the entire human code thus attested to, hopefully the time will also come for the thorough re-thinking of certain criteria as suggested at the very beginning of this paper.

Indeed, it is earnestly hoped that considerations such as these may stimulate a myriad of new thoughts for directions in research in the nature of man. For man who has used science to bring about understanding of the natural world, clearly, must in the future use it a hundredfold increased to bring about order in his own.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Linguistic Affinities of the Scyths

By ROBERT E. KUTTNER

One of the perplexing problems of ethnic identification carried up to this day concerns the varied West Asian hordes first described in detail by Herodotus (*circa* B.C. 450). Greek ethnography gave a central position to the Scyths, who even at that time probably represented a composite nation. There is little hope in unravelling the racial, cultural and linguistic elements in any mobile steppe population. Mounted bands of different peoples can camp together, unite for war and conquest, and then separate again under their chieftains when peace prevails or if there is a need for fresh pasturage. Long association can blend diverse cultures and languages as well as genes.

The historian is fully aware of the mixed nature of cavalry nations. Since the collapse of Rome, scarcely a single barbarian multitude could be called ethnically homogeneous. The Hunnish invaders of Attila who terrorized Europe in the fourth century A.D. enlisted the surviving fragments of the East Gothic nation into their ranks. Approximately one-half of the strength of the Turkic Avars who ravaged the Balkans and Central Europe before the seventh century can be attributed to conscripted Slavic peasants. The majority of the " Arabs " who stormed into Christian Spain a millennium ago were North African Berbers. The Mongol hordes of the Great Khan were principally Turko-Tartar and Tungan satellites. Even in the time of Herodotus, it was well known that the process of ethnic amalgamation had long operated north of the Black Sea. We are told that a city of Greek exiles in the midst of the Nordic Budini spoke a partly Scythic dialect, that the Scyths had mated with the Amazons, and that a Mongol people named Argippaei wore Scythic apparel.[1] These examples attest to the ease with which unsettled peoples can fuse their distinct cultures.

Modern archaeology has not been of particular service in determining Scythic affiliations. A considerable uniformity of burial styles was the rule from South Russia to the Altai plateau at the edge of Mongolia. Physical remains are similarly equivocal. Some

[1] Herodotus, *The Persian Wars* (translated: George Rawlinson), Modern Library, New York, 1912, Book IV.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

skeletal material is reminiscent of Mongol, and other finds indicate Nordic or Mediterranean Caucasic types.[2]

When pooled together, the total evidence is by no means scanty. Unfortunately, the archaeological, anthropological and classical ethnographic data are capable of sustaining several contradictory hypotheses. Perhaps all contain some portion of the truth which merely reflects the basic fact that warlike nomadic populations flow together with uncommon facility. Adding to the discomfiture of scholars is the lack of any written language that would preserve clues to Scythic origins.

Despite difficulties of interpretation, we can be certain that a core of Scythic peoples existed relatively unmixed at the time of Herodotus, who repeated the claim of the Royal Scyths for this distinction. We may further assume that since this band was politically dominant, they not only preserved their language but were able to impose it on allied peoples and on subjugated nations. If this is allowed, the few Scythic words recorded by the Greeks may suggest linguistic affinities.

Scythian kings are listed by Herodotus who also mentions various deities. Many of their names are Indo-European (Aryan) in appearance. This by itself is not sufficient since the Scyths were in prolonged contact with both Thracians north of Macedonia and with Iranians in the Pontic regions. Transliteration of alien names to the closest Indo-European equivalent would be natural. Where Greek, Thracian, or Iranian influences were strong, individual Scythian chiefs could well have accepted or preferred Indo-European names. This process would have been least resisted in mixed bands which might have contained Indo-European contingents.

In some cases, folk histories derived later Indo-European nations from eponymous heroes of supposed Scythic ancestry. The Medes, for example, can trace to semi-mythic, if not mythic, King Madyes who allegedly reigned in Transcaucasia about B.C. 630. The same caution is necessary in considering this type of evidence as is applied to genealogies derived from Greek mythology and from biblical sources. Obviously, it would serve Medean political purposes to derive themselves from legendary Scythian princes whether these were Iranian, Uralic, or Turkic.

We find some suspect derivations among the god-names of the Scyths. Tabiti, the supreme deity of the nation, is a goddess and is equated with the Greek Hestia, patroness of the hearth fire.

[2] C. S. Coon, *The Races of Europe*, MacMillan, New York, 1954, pp. 195-201. See also Sergei I. Rudenko, *Frozen Tombs of Siberia: The Pazyryk Burials of Iron Age Horseman* (translated by M. W. Thompson), University of California Press, Berkeley, 1970, chapter 3.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Pastoral people ordinarily elevate a male sky, weather, or storm god to paramount position. It is highly unusual to find a domestic hearth goddess ranked first in a nomad pantheon. The root is questionably derived from the Vogul Finnic " Taut " (fire).[3] Likewise, the Scyths, an inland nation, are given a sea god, Thagimasadas or Thamimasadas which is weakly compared to modern Turkish " tengiz " (sea).

The search for uncontested Scythic words yields a meager supply. In his account of the Amazons, Herodotus states these female warriors were called " Oiorpata " in the Scythic tongue (Book IV, para. 110). " Oiorpata " is reported by him to translate to " man-slayer." The word " Amazon " (Amaza) itself means " without breast " and derives from the Greek belief these maidens underwent mastectomy surgery to improve their skill as archers.

There are no theological or political reasons for a false etymology for " Oiorpata " since this non-existent nation had no diplomatic, commercial, or religious relationship with organized societies. The root for man — " Oior " — is unmistakably Ural-Altaic. In modern Turkish, " Er " continues to mean " man, male, husband."[4] Mongol and Turkic are both Altaic languages which spread westward across the steppes. It does not follow from this, however, that the Scyths were Altai-speakers or of Mongol ancestry. The Uralic division of this language family is a more likely candidate for the source of the Scythic stem-word. The selection of Uralic eliminates the need for an undocumented early migration of Altai speakers across the immense wastes of Siberia from their ancient homeland.

The Uralic division breaks down into Samoyedic and Finno-Ugrian (Finnish and Magyar Hungarian). These non-Indo-European stocks were located peripheral to the Scyths by Herodotus. " Samoyedi " is a contemporary Slavic Russian term meaning " self-eater " and points to the Androphagoi (Cannibals) mentioned by Herodotus in Book IV. Cited in the same section are the Melancheles (Black Robes), an apt description of the national costume of the Volga Finns.[5] These remarkable parallels with living peoples testify to the scrupulous observations and reporting of Herodotus, as many authors have previously noted.[6]

If the Scyths were in contact on some sides with Finno-Ugrians, it is plausible to consider that they themselves may have been of

[3] Ellis H. Minns. *Scythians and Greeks*, 1913, reprinted, Biblo and Tannen, New York, 1971, p. 85.

[4] H. C. Hony, *A Turkish-English Dictionary*, 9th Edition, Clarendon Press, Oxford, 1957, p. 100.

[5] Ellis H. Minns, *op. cit.*, p. 104.

[6] R. Gayre of Gayre, " Herodotus," THE MANKIND QUARTERLY, Vol. XIV, No. 3, January-March, 1974, pp. 156-181.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

this stock. Returning to the root for man—" Oior "'—we discover it in the modern Hungarian " eroosh " which means " strong."[7] Students of linguistics are familiar with the mental equation that connects " man " with " strength " or " virility."

" Man " in Indo-European dialects is given as " vir " (Latin " virile "), " fer " (Keltic), " wero- " (Gothic, surviving in the compound word " werewolf " meaning " man-wolf "), and in Sanskrit " vayas " where it simply means " strength." The equation is visible in Turkish also were " er " (man) yields " erkek " (courageous, manly, virile, true).

The remaining Scythic vocabulary may offer other Uralic cognates although the list is small and composed of terms subject to contamination or invention for cultural or political reasons. The Scyths display traces of both Indo-European and Uralic traits and their affiliation can validly be argued in either direction. Among the latter is their practice of cleansing themselves by steam (Herodotus, Book IV, para. 75). Heated stones are dropped in cauldrons of water in sealed cabins or tents. This custom survives in the Turkish steam bath and the Finnish sauna.

Another interesting argument can be deduced from the legendary Amazons. Since these warrior maids who mated with Scythian youth to form the Sauromatae nation are " breastless," we may speculate that if this fable has any roots in reality, it might possibly be a reference to flatchested Mongol women. The discoidal or relatively undeveloped breasts of Asiatic females might have appeared " breastless " to Greeks who had the well-endowed statues of Aphrodite as a norm for the female physique. To pursue this line of thought further is obviously hazardous since stories about the Amazons were subject to poetic manipulation, but perhaps the onerous labor assigned to Hercules, the mightiest Greek champion, to obtain the girdle of Queen Hippolyte of the Amazons refers to a dimly recalled curiosity over treasured silk garments which Mongol women were likely to possess even in the Bronze Age.[8] If this speculation has any substance, then Scyth and Sauromataei were of Uralic and Altaic mixture, as are a number of known Finno-Turkic peoples.

Whatever the origin of the Scyths, it is undoubtedly true they were ultimately absorbed by their more numerous neighbours. At their high point, they hunted with relentless fury the horseless generation-long campaign led Scythian armies into European

[7] Robert A. Hall, Jr., " Hungarian Grammar ", *Language, 20* (Supplement No. 21) October-December 1944, p. 28.

[8] Villages in North China apparently cultivated the silkworm from antiquity since cocoons have been found at very early sites. See: Cheng TeK'un, " The Beginning of Chinese Civilization," *Antiquity*, Vol. 47, 1973, p. 206.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Thrace and also south over the Caucasus into Iran and Cimmerians who were probably of Indo-European stock. This Mesopotamia. The fate for many was assimilation, a process that was to occur to other invasion waves of Uralic peoples. In the end, the reduced Scythic war bands retreated to the Crimea where they dissolved into various impinging tribes about B.C. 100.

OUR CONTRIBUTORS

DONALD A. SWAN

c/o I.A.A.E.E., Box 3485, Grand Central Station, New York City, NY 10017, U.S.A.

P. K. CHATTOPADHYAY

Reader in Forensic Science, Department of Chemistry, Punjabi University, Patiala, India.

KRIT PAL SINGH KUSHAWA

State Forensic Science Laboratory, Madhuban, Dist. Karnal, Haryana, India.

MARGE E. LANDSBERG

Department of Linguistics, University of Haifa, Haifa 31999, Israel.

ROBERT E. KUTTNER

385 Curtner Avenue (apt. M), Palo Alto, California 94306, U.S.A.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Journals Received

THE PSYCHOLOGICAL RECORD
Published quarterly at Kenyon College, Gambier, Ohio 43022, U.S.A. Vol. 27, Nos. 2, 3, 1977. Price $3.00.

REVISTA DE ESTUDIOS POLITICOS
Published by the Instituto de Estudios Politicos, Madrid 8, Spain. Nos. 213-214, 1977. Price $3.50.

ETHNOLOGY
Published quarterly by the University of Pittsburgh, 4200 Fifth Avenue, Pittsburgh 15260, U.S.A. Vol. XVI, No. 3, 1977. Price $7.00 a year.

CHRISTIAN NEWS FROM ISRAEL
Published by the Ministry of Religious Affairs, Jerusalem. Vol. XXVI, No. 2, 1977. Price (4 issues) $5.00 (IL. 40.00).

ZAMBEZIA
Journal of the University of Rhodesia. Vol. 4, No. 2, 1976. Price $6.50.

JAHRBUCH FUR VOLKSKUNDE UND KULTURGESCHICTE
Published by Akademie-Verlag, Berlin. Jahrgang 1976, Band 4.

ALASKA
Monthly journal published by Alaska North-West Publishing Company, Anchorage, Alaska. Vol. XLIII, Nos. 9, 10. Price $1.00.

NEUE ANTHROPOLOGIE
Published quarterly by Gesellschaft für Biologische Anthropologie Eugenik und Verhalten forschung, West Germany. Vol. 5, Nos. 3, 4, 1977.

HISTORICAL ABSTRACTS
Published by ABC-Clio Press, P.O. Box 4397, Santa Barbara, California 93103, U.S.A. Part A Modern History Abstracts (1450-1914), Vol. 22, Pt. A, No. 4, 1976; Part B Twentieth Century Abstracts (1914-1975), Vol. 22, Pt. B, No. 4, 1976.

HUNGARIAN STUDIES NEWSLETTER
Published three times a year by the Hungarian Research Centre, American Hungarian Foundation, P.O. Box 1084, New Brunswick, New Jersey 08903, U.S.A. No. 13, 1977.

FOLKLORE
Published monthly by Indian Publications, 3 British Indian Street, Calcutta 69, India. Vol. 18, Nos. 3, 4, 5, 6, 7, 8, 9, 10, 1977.

THE JOURNAL OF INDO-EUROPEAN STUDIES
Published from Suite 211, 1785 Massachusetts Avenue N.W., Washington D.C. 20036, U.S.A. Vol. 4, No. 2. Price $12.50 a year.

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES
Published by the National Academy of Sciences, Allahabad, India. Vol. XLV, Part IV, Section B, 1975. Price Rs. 15/-.

HIDALGUIA
La Revista de Genealogia Nobleza Y Armas, Vol. XXV, No. 145, 1977.

ZEITSCHRIFT FUR KULTURAUSTAUSCH
Published by the Institut für Auslandsbeziehungen, Stuttgart. 27 Jg. 1977, 4Vj, 28 Jg. 1978, 1Vj.

JOURNAL OF RACIAL AFFAIRS
Published by the South African Bureau of Racial Affairs, Pretoria, South Africa. Vol. 28, No. 4, 1977.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Book Reviews

THE WORLD, THE WEST AND PRETORIA

By Alexander Steward, David McKay, New York, 1977. Pp. 308. Price $14.95.

This volume is a systematic exposition and defense of the South African philosophy of separate national development by the editor of *RSA World*, a publication that is without doubt the most intelligent and thought-provoking analysis of African events.

Mr Steward has attempted to view the evolving and deteriorating position of South Africa in world opinion from the standpoint of postwar developments in the United States, Great Britain, Black Africa, and South Africa itself. The exposition of the developing environment of Western expectations is a rather fascinating account of the transition from the euphoric belief that the Asian and African peoples would progressively evolve into increasingly enlightened democracies or at least modern states once the Axis had been defeated to the disillusionment that swept the modern non-Soviet world in the sixties and seventies.

Steward's book was evidently completed during the Ford Administration, a time of seemingly justifiable optimism for South Africa. As Mr Steward perceptively viewed the situation, the Nixon Administration had engineered a fundamental, though largely unnoticed, revolution in U.S. foreign policy. Mr Nixon had cast aside the illusion, which had been characteristic of Wilson, Roosevelt, Kennedy and Johnson, that America had the mission of serving as moral schoolmaster to the world, and that it had the right and duty to intervene anywhere that governments were set up which did not conform to its own criteria of justice. Nixon recognized that the power of the United States was not infinite; that the political system which had contributed to our own felicity and power was not necessarily appropriate to other states; that diversity is a law of social organization as well as of nature, and that American foreign policy should consist primarily of the pursuit of American national interests. Under President Nixon and Secretary Kissinger, South Africa was regarded as a friendly nation rather than as the target for an ideological crusade. An effort was made to understand the conditions and circumstances which made South Africans opt for separate national development and move tentatively and experimentally towards new forms of confederation and autonomous organs of government.

Steward could not have foreseen either the election of Jimmy Carter or the disastrous consequences of that electoral decision for both the people of the United States and the citizens of South Africa. We are not only back in the crusading rut of Wilson and Kennedy, but the new Administration for the first time openly co-operates with the Soviet Union and with communist forces within Black Africa to destroy the Republic and thus obliterate the one great focus of modernity and civilization below the Sahara.

Steward, however, did foresee and does expatiate on some of the neuroses of Western Civilization that the Carter policy exemplifies. He notes the fact that disillusionment with the United Nations and the post-war dream of a stable and just international world order transformed itself into a collective masochism, a distrust of civilization itself, and above all what Toynbee called "a failure of nerve," that is to say, a disbelief in one's moral right and one's competence to govern. In Great Britain, these pathological developments were intermeshed with stagnation and regression under the Labour Party, with rising communist power in the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

key trade unions, and with the growth of a passionately-held secular religion of egalitarianism in accordance with which any intimation that the African tribal Negro was incapable of furnishing his proportionate quota of Lincolns, Shakespeares, Mozarts, Newtons and Leonardos was to be regarded as a recrudescence of Nazism.

Steward gives much interesting detail about the long and sorry litanies of murder and misrule that constitutes the history thus far of the independent nations of Black Africa. He explains the South African belief that viable nations must consist of communities of people who share a heritage, a language, a history, institutions, habits, traditions and religions and that, when nations are mere de facto hodge-podges of mutually incongruent peoples and races who happen to occupy the same or contiguous territory, the result is discontent, riot, perhaps civil war, the accumulation of centrifugal forces until the artificial order is blown apart.

The salient weakness of the book, to my mind, is that it does not deal with the hard questions implied in the separate development approach. It is all very well to talk about cultural autonomy and to aver that all peoples have significant contributions to make to civilization. But this does not get us down to the bedrock questions. If South Africa is permitted by the rest of the world to carry out her experiment, will the Bantustans be able to create modern civilization? What will happen to any South African confederation of associated autonomous or independent entities, if the Black ones become staging areas for offensive actions against the civilized core? Where in short will power really reside and how are the power relations between Whites, Blacks, Coloured and Indians to be defined?

These questions may become increasingly irrelevant unless Mr Carter (but never, I believe, such ideologically committed advisors as Mondale and Young) has a change of heart and a return to common sense, unless Britain promptly elects a vigorous Tory government, or unless Congress simply refuses to support the new Carter adventurism in Africa. Failing these developments, South Africa will have her back to the sea and political experiment will yield to the hard laws of military expediency. In any event, Mr Steward has written a wise book that illuminates many dark corners in the much misunderstood South African attempt to pioneer in new forms of racial accommodation and racial justice. Whether his book has an impact on events or whether he discovers that, like Bolviar, he has spent his time plowing the seas, he has made a good contribution to a worthy cause.

NATHANIEL WEYL

THE IDEA OF RACE

By Michael Banton. Tavistock, London, 1977. Pp. 190. Price £6.50.

This book is written from the sociological point of view and has little to contribute on the question of race as such. Rightly, of course, he points out the incorrectness of using the word "black" for the immigrant communities. The Pakistanis, for instance, are far from black, and are often Caucasoids.

THE SINGING DUST

By Odette Tchernine and Gerald Moore. Neville Spearman, London, 1976. Pp. 87. Price £2.

This is a book of poems by Dr Gerald Moore and Miss Tchernine (our correspondent who has written on subjects more closely related to the purposes of this publication). We wish it well.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

GUIDE TO PREHISTORIC SCOTLAND

By Richard Feachem. Batsford, London, 1977. Pp. 223, 2 maps, 50 illustrations. Price £5.50.

This is a useful book. The first 24 pages give an outline of the prehistory, and then follows a gazeteer. There is then a chapter on Pictish stone symbols, followed by a conclusion, bibliography and index. In the gazeteer itself there is a short introductory essay to each subdivision.

RACE AND REALITY: A SEARCH FOR SOLUTIONS

By Carleton Putnam. Public Affairs Press, Washington, D.C., 1967. Pp. 192. Price $1.50 (paperback).

Many will be acquainted with this book. We are reviewing it now as it has just, mysteriously, come to hand. However, as it has new things to say, we do not hesitate to review it. It follows Putnam's *Race and Reason.*

The author traverses the whole range of race (as far as can be done in a work of 192 pages) and he goes far to destroying the equalitarian basis on which most of the legislation of these days rests. I do not believe that these modern doctrines are susceptible to argument. Driven on with the fervour of Marxism, World Council of Churches, and all the moralising that goes with them, plus the determination of certain scholars to justify the actions of these ideologies, we have almost an insurmountable barrier to scale. But climbed it will be, and this book will have gone part of the way to have achieved that. Another edition should be brought out soon.

KINSHIP IN BENGALI CULTURE

By Ronald B. Inden and Ralph W. Nicholas. University of Chicago Press, London, 1977. Pp. 139, 4 figures. Price £10.85.

This is an authoritative work which defines the boundaries of each word and brings them to classify kin, and illustrates this with kinship tables. From this it moves on to the study of life cycle rites as symbolic acts of birth and marriage. It has to deal with a society containing non-caste and caste Hindus, and on the death and rebirth. This latter is because of the intense belief in reincarnation.

The book also deals with the language of kinship in Bengal. There is an appendix on Bengali Muslim kinship.

It is a mine of information not easily obtainable elsewhere.

TRADITION AND CHANGE IN THREE GENERATIONS OF JAPANESE AMERICANS

By John W. Conner. Nelson-Hall, Chicago, 1977. Pp. 356, 56 tables, 5 figures. Price $18.00

John Conner deals with the acculturations of three generations of Japanese. They are considered model citizens, keeping law and order, and showing a desire to get on. Indeed they have the lowest delinquency rate in the United States.

The problem has been to investigate the psychological behavioural characteristics in three generations of Japanese in the Sacramento area. The evidence shows that even after three generations the Japanese are less dominant, less aggressive and have a feeling for order in excess of the Caucasoid American. They also still retain many Japanese characteristics (p. 310). This is, of course, without taking into account the racial differences of physical character (p. 315). The fact that most Japanese Americans prefer to marry other Japanese Americans (which is natural) must perpetrate the racial differences.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

INTRODUCTION TO BIOMETRICAL GENETICS

By Kenneth Mather and John L. Jinks. Chapman and Hall, London, 1977. Pp. 231, 59 tables. Price £8.50.

This is, as its title makes clear, a work devoted to biometrical questions. It is basically concerned with continuous variation. It provides methods by which evolution can be understood. It is written for students who have decided that they need information on continuous variation.

EVOLUTION

By Theodosius Dobzhansky, Francisco J. Ayala, C. Ledyard Stebbins and James W. Valentine. Published for University of California, Davis, California, by Freeman, San Francisco. Numerous tables, diagrams and illustrations. Pp. 572. Price £11.60.

The authors give a coverage of fundamentals and evolution, including unresolved problems, and the work is intended for students, as well as scientists engaged with the subject. The book consists of sections dealing with: "The Nature of Evolution"; "The Genetic Structure of Populations"; "The Origin of Hereditary Variation"; "Natural Selection"; "Populations, Races, Subspecies"; "Species and their Origins"; "Patterns of Speciation"; "Transpecific Evolution"; "Phylogenes and Macromolecules"; "The Geological Record"; "Cosmic Evolution and the Origin of Life"; "Evolution of Prokaryotes and Unicellular Eukaryotes"; "The Evolutionary History of Metazoa"; "Evolution of Mankind"; and "Philosophical Issues." The book goes into considerable detail of each branch of the subject.

SYNERGETS: Explorations in the Geometry of Thinking

By R. Buckminster Fuller in collaboration with E. J. Applewhite. Preface and contribution by Arthur L. Loeb, Harvard University. Macmillan, New York and London, 1976. Numerous diagrams and illustrations. Pp. 877. Price £14.

Obviously, this is a big book, and it is on a profoundly difficult subject. Nevertheless the author makes it of interest.

In the introduction he puts the point that mind is weightless and distinct from the brain. This is a view that I hold myself and so I was pleased to see it put so forcefully as he has done in the very introduction. Thus he says (pp. xxvi and xxvii): "Mind is the weightless and uniquely human faculty that surveys the ever larger inventory of special case experiences stored in the brain bank and, seeking to identify their inter-complimentary significance, from time to time discovers one of the rare generalizable principles running consistently through all the relevant experience set. The thoughts that discover these principles are weightless and tentative and may also be eternal. They suggest eternity but do not prove it, even though there have been no experiences thus far that imply exceptions to their persistence. It seems also to follow that the more experiences we have, the more chances there are that the mind may discover, on the one hand, additional generalized principles or, on the other hand, exceptions that disqualify one or another of the already catalogued principles that, having heretofore held 'true' without contradiction for a long time had been tentatively conceded to be demonstrating *eternal* persistence of behaviour. Mind's relentless reviewing of the comprehensive brain bank's storage of all our special-case experiences tends both to the progressive enlargement and definitive refinement of the catalogue of generalized principles that inter-accommodatively govern all transactions of Universe."

R. Gayre of Gayre

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MEHINAKU: The Drama of Daily Life in a Brazilian Indian Village

By Thomas Gregor. University of Chicago Press, Chicago and London, 1977. Pp. 382, 28 figures, 24 tables. Price £16.80.

This is a very good book on these particular Indians in the heart of Brazil who, although still in a primitive state, are threatened by Brazilian development in the forests near their homelands. Yet to re-locate these Indians would be to destroy them.

Apparently both sexes go naked, except for their "dress" of ornaments. They believe that a child is created by several impregnations and as a consequence they are not particularly worried by a married woman having numerous lovers. Being matrilineal the descent through the mother is important.

On the dust-jacket Professor Robert F. Murphy (Columbia University) says this is one of the most analytical works to emerge from the anthropological profession for many a year. With that judgment we readily concur.

A GUIDE TO ANCIENT MEXICAN RUINS

By C. Bruce Hunter. University of Oklahoma Press, Norman, Oklahoma, 1977. Pp. 201, 153 illustrations, 31 colour plates, 25 maps and plans. Price $9.95 (£5.95).

This is a companion volume to C. Bruce Hunter's *A Guide to Ancient Maya Ruins.* The author has led archaeological field trips in Mexico and the Maya regions for years for the American Museum of Natural History and New York University. He is lecturer in archaeology and adjunct professor of archaeology at New York University.

This is a thorough work of describing the ruins of ancient Mexico, and in the course of the descriptions are indications of how the arts and crafts were organised.

Early man is believed to date back 10,000 years, although he may have arrived in Mexico as early as double that time. Between 7000 and 4000 years ago he established villages. Corn (maize) was cultivated 6000 years ago. There is, therefore, quite a long period in the prehistory of Mexico with which the author deals before he comes to the ruins of the classical period.

It is a useful contribution to the subject.

CELTIC ART: An Introduction

By Ian Finlay. Faber and Faber, London, 1973. Pp. 183, 111 illustrations, 49 figures.

This is a worth-while book and it is far from being an introduction to Celtic art. It is beautifully illustrated and produced, a credit to author and publisher alike.

One wonders how far Celtic art was not merely influenced by Scythian (which the author acknowledges) but was even more strongly influenced than is suggested, and how far Nordic art (which also has the animal style motif) was influenced by both. Here, at any rate, is an account of their growth.

The book also serves to rehabilitate Celtic art north of the Mediterranean countries as valid of its own merits, and with the grasp of technology which the Celts possessed, in every way the equal, but different, of Greek and Roman art.

R. Gayre of Gayre

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MUSIC IN THE CULTURE OF NORTHERN AFGHANISTAN

By Mark Slobin. Wenner-Gren Foundation for the Anthropological Research Inc., New York. Pp. 297, 11 tables, 56 illustrations, seven maps. Price $5.95 (paperback).

The region is a multi-ethnical society representing Iranians and Turko-Mongols. The book deals with the music of the north, and at the same time looks to the musical traits shared by more than one ethnic type.

Slobin gives a full account of the instruments and also their styles of playing. Music appears to have been received in an ambivalent manner, much of it frowned on by devout Moslems. As a consequence a great deal of casuistry was employed by many Moslems to enable them to enjoy it. Since the formation of Radio Afghanistan there has been a perceptible change of attitudes, as the radio station has employed more and more music.

This is an exhaustive book on the subject which will be of use to both those interested in music as well as those interested in music-ethnology.

THE DEMOGRAPHIC EVOLUTION OF HUMAN POPULATIONS

By R. H. Ward and K. M. Weiss. Academic Press Inc. (London) Ltd., London and New York, 1976. Pp. 158, numerous illustrations. Price £4.80 ($12.25) (paperback).

This book sets out to show that demographic parameters affect differential survival of populations in evolution. There may, of course, be debate as to whether components of differential mortality or differential fertility are more effective in influencing evolution. In the course of investigating this problem the authors range from palaeo-demography, a valley study in Fiji, to genealogies (from parish registers) of Parma.

THE SCIENCE OF GENETICS

By G. Burns. Collier-Macmillan Publishers, London 1976 (second edition). Pp. 564, numerous illustrations. Price £9.25.

This book covers all branches of genetics and is well worth while having on one's bookshelf.

It makes for sombre thought to remember that over 1500 disorders affect human beings. These will no doubt increase as we bend all our resources to keeping alive those who would formerly have died. This is a very good book, free from the bias so often found in such works where they consider a diatribe on race to be necessary to be in the current fashion. It is highly recommended.

THE INEQUALITY PRINCIPLE

By A. T. Culwick and J. C. Oosthuizen. Dolpin Press (Pty) Ltd., Durban, South Africa. Pp. 76.

This short book is an attack on the equality principle, and in so far as it is, it is absolutely in accord with nature and all our experience. Only, today, we have a situation in which the very reverse is held to be true—and with it a degree of chaos and turmoil which the world has never seen before. As they say: "Man is a hierarchial species; his efficient organisation necessitates a chain of command; and any system that fails to recognize this is a brittle social structure that will crack under stress."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ETHNIC DIVERSITY IN CATHOLIC AMERICA

By Harold J. Abramson. John Wiley, Sussex, 1973. Pp. 207, 42 tables. Price £6.00.

The usefulness of this work is partly vitiated by the fact that while it classifies the Irish separately, it has only "English." Whether the Scots and Welsh have not been studied, or if they have and are lumped under "English," is not clear. The pattern of religion in Scotland, for instance, is quite different from that in England. To begin with, on the whole Roman Catholicism in Scotland is a lower-class religion, and the bulk of the middle class are Presbyterians, and more anti-Catholic, than the English.

Thus when he says that the Irish use *Sassenach* for an Englishman and Protestant, that may be so. But the Highlander uses it indifferently for Lowlander or English and carries with it no religious aspersions at all. The trouble in Northern Ireland is not an English one but a British. English and Scottish settlers are face to face with the native Irish.

We can quite well believe that the assimilation of different ethnic groups is by no means uniform as Professor Abramson points out.

However, putting aside the objections we have made, it is a good book as it analyses to date the position of the ethnic-religious elements.

SHEM, HAM AND JAPHET: THE PAPERS OF W. O. TUGGLE, COMPRISING HIS INDIAN DIARY, SKETCHES AND OBSERVATIONS, MYTHS AND WASHINGTON JOURNAL IN THE TERRITORY AND AT THE CAPITAL, 1879-1882.

Edited by Eugene Current-Garcia and Dorothy B. Hatfield. Georgia University Press, 1973. Pp. 361. Price $12.50.

This book is of interest to the historian and the anthropologist. Tuggle fought in the Confederate army in the Civil War and was twice taken prisoner. After the war he became a lawyer, and represented the Cherokee nation and assisted them in getting compensation from the state.

There is not only in diary form his meetings with Indian chiefs but also with other people as well. As a consequence, we have said it is important to the historian.

The latter part of the book is taken up with folktales and myths of the Indians.

THE INTERPRETATION OF RITUAL: ESSAYS IN HONOUR OF A. I. RICHARDS

Edited by J. S. La Fontaine. Tavistock Press, London. 1974. Pp. 296. Price £1.75 (paperback).

Besides an introduction by the editor there are papers by Raymond Firth ("Verbal and bodily rituals of greeting and parting"), Esther Goody ("Greeting, begging and the presentation of respect"), Aidan Southall ("Twinship and symbolic structure"), R. G. Abrahams ("Spirit, twins and ashes in Labwar, Northern Uganda"), Edwin Ardener ("Belief and the problems of women"), the editor ("Ritualization of women's life-crises in Bugisu"), Monica Wilson ("The wedding cakes: a study of ritual changes"), Elizabeth Bott and Edmund Leach ("The significance of kava in Tongan myth and ritual"), Elizabeth Bott ("Psychoanalysis and ceremony"), Edmund Leach ("The structure of symbolism") and Elizabeth Bott ("A rejoinder to Edmund Leach").

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BEVOLKERUNGSBIOLOGIE (BIOLOGY OF HUMAN POPULATIONS)

Edited by W. Bernhard and A. Kandler. Gustaf, Fischer Verlag, Stuttgart, West Germany, 1974. Pp. 729.

This is a weighty book by any standards and it is published in commemoration of the 65th birthday of Isle Schwidetzy in 1972. We can only hope to pick out a few subjects for comment. It is written in German, French and English, and so, we hope, will not be a deterrent to English-speaking readers.

Virendra P. Chopra (Mainz) makes clear that mating in human populations is not random. It is limited by social, economic, religious, cultural and geographical factors. Random mating may take place within some of these groups. Assortative mating intervenes to disturb random mating within any group. This is found to show positive correlation between partners (p. 14).

Napoleon Wolánski (Warsaw) writes on "The Problems of Heterosis in Man," while Janos Nemeskéri (Budapest) deals in German with an English summary on "Investigations Concerning the Genetic Structure of Populations Through a Historical Pattern of Movement." Hans Fleischacker (Frankfurt) writes, in German with English summary, on the "Contribution to the Genetics of Bastard Populations." A connection was found between the ABO blood group in certain Red Indian and European crosses in certain traits.

Hubert Walter (Mainz) writes on "Environmental Adaptation in Man," and Andor Thoma (Louvain) on "A Search for the Causes of p^a Stabilization." R. Ola (Ojikutu, Lagos) has a paper on "Skin Pigmentation Changes in Man." In French is a "Contribution to the Study of Factors Determining the variability of Age at Puberty in Females" by Marie Cristescu (Jassy).

Rainer Knussman and Frederick W. Rösing (Hamburg) write upon "Anthropological Structure of Ethnic Groups." In the course of their paper they show that the Herero of South-west Africa are to be classified as Ethiopoid, which is in accordance with my own investigations. The Darma are, of course, typical of the Negroid (p. 125).

Wolfram Bernhord (Mainz) writes upon "The Anthropological Position of the Ethnic Groups from the Hindu Kush—a Multivariate Statistical Approach." In this paper the author shows the population in two parts—one which is decidely mongoloid, and the other which is Europoid, Indo-Aryan, and, in the Kaffirs and some Dordic tribes, light hair, eyes, and skin are common.

Jens Pálsson (Reykjavik) writes on "The Origin of the Icelandic Population from the Anthropological Viewpoint," and concludes they are nearer the Scandinavians than the populations of Britain and Iceland. However, he does not rule out the influence of the latter.

L. Tzacheva, Y. Yordanov and S. Mutatov (Sofia) deal with "Anthropological Investigations of the Tatars in Bulgaria." They are found in the north-east of the country and are quite different from the Bulgars.

Margorete Weninger (Vienna) and G. Ruthbuchner (Ulm) contribute "Finger and Palmar Dermatoglyphics of Greeks" while Sophie Ehrhardt (Tubingen) provides "Flexion Creases of Gypsies."

Hans W. Jürgens (Kiel) deals with "Socio-biologically induced changes of Human Population Structure," and Georges Olivier (Paris) concerns himself with "Physical Anthropology and Society." We are with him when he says: "Sociologists would do better if they analyse *with* physical anthropologists social patterns which entail genetic changes" (p. 280).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

R. L. Cliquet (Deurle) writes on "Purposes, Results, and Prospects of the 1966 and 1971 National Fertility Surveys in Belgium." "Some Aspects of Differential Fertility in India" is discussed by M. R. Chakravarti and Mrs R. Chakravarti (Waltair).

In the second part of the book we have the "Structure of Dynamics of Prehistoric and Historic Populations" dealt with. In many respects this is the most interesting part of the book. This is followed by the third part of the book devoted to the evolution of man. Because of lack of space we cannot mention the many interesting papers included in these sections of the book; papers which are, on the whole, even more important than those already mentioned. The readers of this review must simply buy the book to satisfy themselves—but they will not be disappointed.

R. GAYRE OF GAYRE

UNIQUENESS AND DIVERSITY IN HUMAN EVOLUTION: MORPHOMETRIC STUDIES OF AUSTRALOPITHECINES

By Charles Oxnard. University of Chicago Press, London, 1975. Pp. 131, 87 illustrations. Price £9.00.

The author uses multivariate statistical analysis to investigate evolutionary biology. It is used to draw attention to the anatomy of living primates (including man) to the Australopithecines. These relations do not indicate a direct descent of *Homo erectus* from these Australopithecines.

Professor Oxnard has written a useful and, indeed, illuminating work.

THE WARP-WEIGHTED LOOM

By Marta Hoffmen. Universitetsfordlaget, Oslo, 1974. Pp. 427, 137 figures.

At first sight the warp-weighted loom seems to be well-nigh extinct in Norway. The mothers of some of those interviewed had used it but no one could give any information about its use. Eventually, Marta Hoffman found a family in western Norway who could use the loom. It was also clear that it was in use in northern Norway.

The writer states that fine weaving was known from Neolithic times onwards and there is no evidence that plaiting preceded weaving proper. It is also the loom which was used in classical antiquity. The loom weights are found in Neolithic and Bronze Age times from finds in Switzerland, Crete, Italy, Hungary and Poland. They are found right into Russia.

Marta Hoffman has done a good thing in going so thoroughly into the distribution of the northern weighted loom.

QUICKSILVER HERITAGE: THE MYSTIC LEYS—THEIR LEGACY AND ANCIENT WISDOM

By Paul Screeton. Thorsons, Wellingborough, England, 1974. Pp. 304, 10 illustrations. Price £4.50.

This book deals with Leys, lines drawn on the map from prehistoric monument to monument, which Mr Screeton, and others, claim have significance. Whether they do or not remains to be seen.

However, the work of Professor Gerald Hawkins, an American astronomer (p. 120) and Professor Alexander Thomas, Emeritus Professor of Engineering at Oxford (p. 120 ff.), are dealt with, as well as Professor Lyle B. Borst, New State University (p. 121). These certainly give food for thought and indicate that magalithic man was not someone ignorant of mensuration as was formerly thought.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

SCENES OF EDWARDIAN LIFE

By Sir Charles Petrie. Severn House Publishers, 1975. Pp. 244, 24 illustrations. Price £3.75.

This is an account of the Edwardian period written with all Sir Charles Petrie's flair and ability. In the course of it he deals with the depopulation of St Kilda. In England, the enclosures had contributed to a similar depopulation of the countryside. Even the coming of the railways made their contribution and other roads began to decline. Let us hope that the roads (with a declining railway service) will reverse the trend—but I doubt it.

R. GAYRE OF GAYRE

THE AMERICAN INDIAN: ESSAYS FROM THE PACIFIC HISTORICAL REVIEW

Edited by Norris Hundley. American Bibliographical Centre-Clio Press Inc., Santa Barbara, California, and Oxford, 1974. Pp. 151. Price £4.50 (hardback), £2.30 (paperback).

This book is a collection of essays by Robert F. Berkhofer, William T. Hagan, Wilbur R. Jacobs, Nancy Oestreich Lurie, Donald L. Parman and Wilcomb Washburn. The burden of the statement they make is that while the Australian natives and the North American Indians were dispossessed of their lands the people of New Guinea were not. The Red Indians (and the Australoids as well) had to retreat before the invading white men.

THE REVOLUTIONARY MISSION OF MODERN ART: OR CRUD, AND OTHER ESSAYS ON ART

By Margaret E. Stucki. Published by the Editor, Dr Karl Scheibe, Hartwick Reviews, Birds Meadow Publishing Co. Inc., P.O. Box 356, Cape Canaveral, Florida, Pp. 215, 30 illustrations. Price $3.50 (paperback).

Crud, according to Webster's Dictionary, is defined as a deposit or incrustation of filth, grease, or refuse; an impurity or unwanted foreign substance; a disease or disorder real or imaginary; especially one not clearly identified.

This is a history and a justified indictment of modern art. The roots are shown to grow out of communism and atheism, with the deliberate intention of destroying the Christian Western civilization. Picasso, for instance, with his work challenged civilization. Korinsky was the founder of abstract art.

This is a first class book which goes to the heart of the matter, and is supported by illustrations. The stylisation in art forms indicates a civilization is ossified: but in this age, the art forms have gone a long way beyond that phase, and they are downright destructive of any art at all. Professor Stucki has seen well to point to this. Her book deserves to be read widely.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

DAS OFFENBARTE LEBEN

By F. Ritter

I. Bd. Lebensschöpfung und Vernunftfrevel, 344 S. DM 20

Life on this planet now and through the millions of years of evolution and coming extinction of mankind.

II. Bd. Schmarotzerzüchtung und Erbopferung, 247 S. DM 15

Parasitism and disease, and the development of parasites and diseases.

III. Bd. Nietzsche, der gerechtfertigte Seher, 585 S. DM 32

Nietzsche's vision, his insight into mankind's true predicament, for the first time revealed and explained and demonstrated in detail. "The True Book of Philosophy."

By encompassing all the vital facts of our world and mankind, it constitutes the true scientific biological book in the world and makes our situation thoroughly and perfectly clear.

Without its insights, no human future is possible.

Der Biologe f. Ritter bringt die für uns lebenswichtigen, aber der Offentlichkeit noch weitgehend unbekannten, erbbiologischen Erkenntnisse und die daraus zu ziehenden Schlußfolgerungen in verständlicher Form. Verantwortungsbewußte werden vor Entscheidungen gestellt, wenn sie nicht ihre Nachkommen in den körperlichen, geistigen und seelischen Untergang geraten lassen wollen, der von gewissenlosen Machtgruppen und Ideologien der Masse als Fortschritt gepriesen wird.

Halbleinen 24 x 17 cm. Bände auch einzeln lieferbar.

Zu beziehen von:

F. Ritter Verlag,
D — 3119 Tätendorf,
Eichenhof,
Deutschland.

Also obtainable from:

European Printing and Publishing Company Limited,
92-94 Gray's Inn Road,
London, W.C.1.

Das Buch, ohne dessen Erkenntnisse keine Menschenzukunft möglich ist!

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Reprints of interest to the Genealogist

S. R. Publishers here offer some titles from their range of reprints which will appeal to those with an interest in the field of genealogy. *These are beautifully prepared facsimile reprints of* rare works, for long out of print and virtually unobtainable.

History, Directory and Gazetteer of the County of York

by Edward Baines

Published: Leeds Mercury, 1822-1823. Reprinted with new introductory notes by Owen Ashmore. A directory, listing population, professions and notable inhabitants of the various towns, cities and villages in Yorkshire.

pp. 654 + cxliv and 656. 2 volumes **£3.15** per volume

John Speed's Atlas of Wales

(Part II of ' The Theatre of Great Britaine ')

Published: London, 1676. This is an exact facsimile of the 1676 edition. Probably the greatest British cartographer ever, Speed's work is still available in many formats but this will be the first time that his complete Atlas of Wales has been available again for over 250 years.

pp. 64 **£5.25**

Birmingham Inventors and Inventions

by R. B. Prosser

Published: Birmingham, 1881, Journal Printing Works. Originally published in an edition of only 50 copies, this is probably the rarest book on Birmingham. The new work includes an introduction by Professor Asa Briggs, Vice-Chancellor of Sussex University.

pp. 264. **£2.50**

Place Names of Scotland

by Rev. J. B. Johnston

A reprint from the 1934 edition. Probably the most important work of this well-known philologist.

pp. 352. **£3.50**

Full lists and details available from:

S. R. Publishers Limited

East Ardsley, Wakefield, Yorkshire

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

NOUVELLE ECOLE

REVUE DE RECHERCHE ET D'ETUDES SUR LA CIVILISATION EUROPEENNE

Parmi les textes publiés récemment: *Konrad Lorenz et l'ethologie moderne*, by Alain Benoist; *Le mythe du hasard*, by Marc Beigbeder; *Des fondements de l'Etat libre d'Islande: trois siècles de democratie médiévale*, by Frédéric Durand; *Présence de Montherlant*, by Gabriel Matzneff and Pierre Pascal; *La langue comme destin*, by Friedrich Sieburg.

NOUVELLE ECOLE

B.P. 129/75326 — PARIS-CEDEX 07 (FRANCE)

Abonnement: simple (1 *an*—4 *no.*): 95 *F*—*étranger:* 110 *F*—*de soutien: à partir de* 150 *F.*

Spécimen gratuit sur demande.

MANNUS — ZEITSCHRIFT FUR DEUTSCHE VORGESCHICHTE

begründet 1909 von Gustaf Kossinna, herausgegeben von Dieter Korell.

Mannus berichet viermal jährlich in vielen Aufsätzen und Besprechungen über germanische Geschichte und über die Vorzeit Europas.

Ständige Mitarbeiter sind unter vielen anderen die deutschen Wissenschaftler: Prof. Dr. Bolko Frhr. von Richthofen, Dr. Heinz-Joachim Graf, Dr. Alexander Leyden, Prof. Dr. Peter Zylmann, Dr. Haye W. Hansen.

Mannus wird herausgegeben in Verbindung mit der Deutschen Gesellschaft für Vor- und Frühgeschichte. Der Jahresbezugspreis ist DM 36.-, andere Währungen entsprechend.

Ihre Bestellung richten Sie bitte an:

Mannus-Verlag, D 53 Bonn 1, Postfach 97, Westdeutschland.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

More Ethnological Elements of Africa

By R. GAYRE OF GAYRE

This book is a sequel to *Ethnological Elements of Africa* (still in print priced £1.40) and contains further essays on African ethnology reprinted from THE MANKIND QUARTERLY. The essays do not set out to deal in detail with every aspect of this vast subject but attempt to synthesise the major racial elements of Africa, to indicate their relationships and differences, and to formulate a theory of the racial origins of the African populations of our times.

149 pages £3

THE ARMORIAL

1 DARNAWAY STREET, EDINBURGH. EH3 6DW
SCOTLAND

Miscellaneous Racial Studies 1943-1972

By R. GAYRE of GAYRE

in two volumes

Volume I 1943-1956 ● Volume II 1957-1972

Price £3 per volume

These two volumes consist of papers and lectures written over a period of nearly thirty years. They indicate the author's steadily evolving concept of the three basic stocks of mankind which he has since come to enunciate more and more as editor of *The Mankind Quarterly*.

THE ARMORIAL

1 DARNAWAY STREET, EDINBURGH, EH3 6DW
SCOTLAND

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Syro-Mesopotamian Ethnology

as Revealed in Genesis X

By R. GAYRE OF GAYRE

The writer of the tenth chapter of Genesis is the father of ethnology. There are in the Church today many elements which consider that the tenth chapter of Genesis has no connection with modern ideas. The author in a detailed analysis shows that chapter ten is indeed relevant to us today. He concludes that Genesis X does not support a mongenetic origin for man and was a serious attempt to classify the races with which the account was concerned on a definite genetic basis.

64 pages — £1.50

THE ARMORIAL

1 DARNAWAY STREET, EDINBURGH, EH3 6DW
SCOTLAND

The Origin of the Zimbabwean Civilisation

By R. GAYRE OF GAYRE

In this profusely illustrated book the author rejects the Phoenician, Moslem and Bantu theories for the origins of the Zimbabwean civilisation, and demonstrates that the Zimbabwean development of Rhodesia was due to the pre-Moslem Arabs, assisted by Indians, Ethiopians, and perhaps Malays and Chinese. He concludes that the ideas of a school of thought which claims that the ruins are recent in origin and are to be called "African," thereby inferring that they are the work of the Bantu, are pure myth.

248 pages, 15 colour plates, 80 black-and-white photographs, 12 maps and ground plans.

Price: R$9.00

COLLEGE PRESS (PVT) LTD

P.O. BOX 3041, SALISBURY, RHODESIA

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

GENUS

The official publication of the

ITALIAN COMMITTEE FOR THE STUDY OF POPULATION PROBLEMS

Published under the auspices of the National Research Council

Editor: NORA FEDERICI

The Scientific Committee of *Genus* is composed of the members of the Technical Committee of the Italian Committee for the Study of Population Problems: V. Castellano, University of Rome; P. Fortunati, University of Bologna; G. Genna, University of Rome; G. L'Eltore, University of Rome; G. A. Maccacaro, University of Milan; I. Scardovi, University of Bologna; and Nora Federici (President).

Vol. XXX, 1974, includes: Applications of the Correspondence Analysis to a Fertility Survey in Algeria, by Leon Tabah; Effects of Different Patterns of Migration on Age Structure and on Fertility, by Antonio Santini; On the Validity of Results in the Studies of Historical Demography, by Giuseppe Leti; Isolate Size and the Matrimonial Structure of the Population of the Aeolian Islands, by F. Conterio, O. Rossi and L. Soliani; Influence of Education on Fertility in Italy, by Luciano Ciucci and Anna De Sarno Prignano.

The annual subscription to *Genus* is $10.00 (or equivalent), and subscriptions should be sent to: Segreteria del Comitato Italiano per lo Studio dei Preblemi della Popolazione, Via Nomentana, 41-00161 Rome, Italy.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

THE MANKIND QUARTERLY

SUBSCRIPTION RATES

Single issue — £1.50 ($3.00); annual subscription (4 issues) — £5 ($12.00); three-year subscription (12 issues) — £14 ($35.00). Post free by surface mail. Copies will be sent by air mail on payment of an extra £3 ($7.00) per year or 70p ($2.50) per copy. Back numbers are supplied while available at £1.50 ($3.00) each. No responsibility can be accepted for copies lost in the post after dispatch.

CONTRIBUTIONS

All material submitted for publication in THE MANKIND QUARTERLY must be fully and finally corrected, and must be in clear, double-spaced typing, preferably in triplicate. All papers must be accompanied by a summary of not more than 100 words.

The Editors do not accept responsibility for the views expressed by individual contributors.

PAYMENT TO AUTHORS

Authors of articles published in THE MANKIND QUARTERLY are now paid at the rate of one guinea or $2.50 per printed page, and they also receive ten free copies of the issue concerned.

1 DARNAWAY STREET, EDINBURGH. EH3 6DW
SCOTLAND

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED